



Eclectic Magazine

OF

FOREIGN LITERATURE, SCIENCE, AND ART.

MAY, 1864.

From the London Quarterly.

CAPTAIN SPEKE'S JOURNAL.

In the last July number of the *Quarterly Review* we hastened to tender our congratulations on the return of the two intrepid travelers who had accomplished the unparalleled feat of crossing the continent of Africa from Zanzibar to Egypt, and to offer our tribute of sympathy in the apparent success of a great undertaking for the purpose of solving the most ancient and interesting of geographical problems. Although Captain Speke did not pretend that he had visited the remote springs of the Nile, or had traced its waters to their fountain-head, he announced that the great lake which he discovered on his first expedition is undoubt-

edly the chief reservoir and head water from which the mighty river, swollen by a thousand tributary streams in its long passage to the sea, derives its annual floods. The details of this extraordinary journey, which extended over a period of more than three years, have now been published; and although scientific geographers may hesitate to fully accept all the conclusions at which Captain Speke has arrived, his *Journal*, which records the daily life of a traveler in the center of Africa, and the residence of months among people who had never before seen a European countenance, can not but be read with the liveliest interest. It is a simple record of struggles made from day to day to accomplish the object which he had at heart; and if there is a little sameness in these difficulties, it must be re-

* *Journal of the Discovery of the Sources of the Nile.* By JOHN HANNING SPEKE, Captain H.M. Indian Army, etc. London. 1863.

membered that it is to the manner in which they were met that the final success of the enterprise is due. It was only from his own diary that the picture of patient energy and manly resolution could have been so well brought out. If it does not possess literary merit, to which its author probably never aspired, it abounds with very extraordinary incidents; and this graphic narrative affords probably a clearer insight into savage life than any more artistic production could have given. Although Captain Speke did not encounter

"The Anthropophagi, and men whose heads
Do grow beneath their shoulders,"

or other monsters with which the imagination has sometimes peopled the interior of Africa, he found himself in daily contact with forms of savage life almost equally surprising. He encountered in his journey from Zanzibar to Gondokoro phases of society which exhibited the merely animal nature of man in all its revolting hideousness, while others assumed the highest form of civilized humanity which probably the African can now attain without receiving an impulse from a higher race. It is not our intention to analyze minutely a work which is now being so widely read, but, postponing for the present some remarks upon the important hydrographical questions which will be revived by this publication, we will trace the course of Captain Speke and his gallant companion from Zanzibar across the African equator until, triumphant over all difficulties, they reached Gondokoro, and were rejoiced by the sight of European countenances, after having dwelt for nearly three years among the black tribes of intertropical Africa without having had any communication whatever with England or indeed with any portion of the civilized world.

The route taken from Zanzibar was, as far as Kazé, the same as that traveled over by Captains Burton and Speke in their joint expedition to the Tanganyika lake in 1859. Kazé is the seat of an extensive commerce in ivory, and the residence of many wealthy Arab merchants, who traffic with natives in this commodity, and send it from that emporium to the coast. Here Captain Speke met with the same warm hospitality which is the characteristic of the Arab race in every part of the world. At Kazé the interest

of the *Journal* may be said to commence, for we are thenceforward introduced to a succession of entirely new scenes, new countries, and new characters; the native States passed through having never before been visited by Europeans. However great may be the geographical interest of this exploration, attention will probably be quite as much directed to the characteristics of the remarkable races which have been brought for the first time to our notice; for the ethnography of Africa is almost the only subject which, in its present infant civilization, is capable of exciting much curiosity. The abundance of every thing requisite for the animal enjoyment of man in this region of the globe presents a striking contrast to his moral and social condition. He absolutely revels in the prodigality of nature. It is an unquestionable fact, that the physical wants of the uncivilized African are supplied in far greater profusion and with much less toil than those of the ryot of India. He is better fed and better lodged; and in those districts where the slave trade has not rendered his liberty precarious, his state may be favorably contrasted with that of the peasantry of the most flourishing countries in Europe. The picture presented to us of the comfort of a peasant in intertropical Africa might almost excite the envy of our toiling and, unhappily, too often suffering millions. He lives upon the almost spontaneous produce of the soil. Grain, vegetables, milk, butter, honey, and fruits form his ordinary fare. He can often indulge in the flesh of bullocks, goats, and sheep. Game in vast quantity lies hid in the thickets or roams over the grassy plains. Herds of fine cattle graze on every green hill. The elephant, the zebra, the antelope, the buffalo, and the hippopotamus, afford a variety of animal food; and a beer made from millet, called "pombé," is the common beverage of subjects and kings.

The most remarkable, perhaps, of modern African discoveries is that of the existence from five degrees south to five degrees north latitude of a surpassingly rich zone of fertility, which diminishes, however, in productiveness as it recedes from the equator. This region might in time become one of the most prosperous and populous in the world. Its climate is as salubrious as its natural beauty is enchanting. It has an elevation which greatly modifies the influence of a tropical

sun; its surface is varied by hills and dales; noble rivers flow through it; it possesses vast lakes resembling inland seas; and several of the mountains which rise from this elevated plateau are among the loftiest in the world. The first necessity of mankind, and the sole condition on which all material blessings can be enjoyed, is, however, unhappily wanting. Its population have never yet been able to constitute for themselves a government founded on any other basis but that of slavery and oppression. Society in Eastern Intertropical Africa, therefore, presents—although a certain kind of civilization has sprung up spontaneously—an aspect but little removed from a state of nature. Roads—the first indication of the material progress of a people—are unknown. There are no bridges but the trunks of trees felled where small streams are to be crossed. Architecture has not advanced beyond the construction of a simple hut. The circulating medium is composed chiefly of cloth and beads; and the nearest approach made to a metallic currency consists of coils of copper wire and old iron hoes. This backwardness in one of the most important conveniences of life is the more remarkable in a country where trade is a passion, and the desire to possess European commodities is displayed with almost childish eagerness. Although the imposing march of the Eastern caravan is unknown in Equatorial Africa, traders have traversed from time immemorial the regions between the equator and the eastern coast; but no four-footed animal except the ass can be used as a beast of burden. Camels would be well adapted for the purpose, but the paths are so beset with mimosa and thorns, that these animals—so invaluable in long journeys in other parts of Africa and in the East—could not pass through them. It is this want of roads which makes the work of exploration so tedious and expensive in Eastern Africa. A traveler must be accompanied by a large body of porters, who carry, either on their head or their shoulders, the whole of the baggage and impedimenta. Slowly winding in single file, over hill and plain, penetrating thickets of gigantic grass, and often forcing his way painfully through dense jungle, the leader of an expedition in Eastern Africa has even more serious difficulties to encounter than physical obstructions. He has to battle with the constant

insubordination of his men by an almost hourly assertion of authority; he has to humor their waywardness and keep watch on their dishonesty, and he is liable to be suddenly brought to a stop by open mutiny. Desertions daily try his temper and firmness. Valuable property, and still more valuable time, are irretrievably lost. Of the seventy-five porters with which Captain Speke started from Zanzibar, it appears from a return given in the Appendix to his book, that thirty-seven deserted during the journey and fourteen were discharged as unfit for further service. It is not only the caprices and disloyalty of his attendants that he has to encounter; he is subjected to numberless forced detentions on the route by the chiefs of the countries through which he has to pass. The hongo, or transit tax—or black-mail—which is imposed by these despots on every traveler is a cause of endless annoyance and delay. No sooner does any one of these petty chiefs become aware of the approach of a traveling party than he forthwith considers how much he can make out of such an opportunity for plunder. Nor is it possible to evade this constantly-recurring tax. If a traveling party should betray an intention to pass by instead of through the territory of some black king, its leader speedily receives an invitation, which is to be interpreted as a command, to the palace; and if he should venture to decline the proffered attention, his porters and escort would speedily be assailed by a flight of arrows from some well-arranged ambush, and he would find his further progress barred by a body of armed men.

Captain Speke was deprived by the exactions of these petty potentates of so large a portion of the presents destined for the great kings of Equatorial Africa before he reached the kingdom of Uganda that the object of his journey was almost defeated, and but for a fresh and opportune supply of goods which reached him at Kaze, he could not have proceeded. His contests with these rapacious chiefs, and his devices to evade their extortionate demands form some of the most entertaining passages of the *Journal*. In Unyamuezi, for example, the demands of the king having been apparently satisfied, he sent his prime minister early on the following morning to say that his sisters and other members of his family had been crying and tormenting him all night be-

cause they had got nothing—an appeal which resulted in a few additional presents to gratify the clamorous court.

The arrogance and insolence of some of these chiefs exceeded all bounds. The King of Uzinza demanded as his due a royal salute from the escort, which was accordingly drawn up in line to fire a volley in his honor. "I never felt so degraded," says Captain Speke, "as when I complied, and gave the word of command as he approached my tent." The king was by no means struck with awe by this novel military display, (the first he had ever witnessed,) but made some critical and by no means complimentary remarks on the want of precision in the fire and of steadiness on the part of the men. The attendants of this prince adored him as a superior being, and snapped their fingers whenever he sneezed. From him, however, Captain Speke obtained the first authentic geographical information respecting the existence of the Baringa lake, supposed to be connected with the Victoria Nyanza. There were, the king assured him, two lakes; for on going from Usaga to the Masai country he crossed over a broad strait which connected the big Nyanza* with another at its north-eastern corner. This young chief gazed at the picture-books with intense delight. Turning to the animals he roared over each one in turn as he examined them, and called out their names. The bull's-eye lantern he coveted so much that Captain Speke had to pretend exceeding anger to stop his further importunities. He begged hard for lucifer-matches to aid him in his magical rites, but was quieted by the gift of a pair of slippers, into which he had unceremoniously thrust his feet.

After having passed through several countries in all of which he was more or less plundered by the chiefs, who refused to order their drums to "beat the satisfaction" and release him from his virtual imprisonment until they had not only exhausted his patience, but provoked an attitude of defiance, a remarkable contrast presented itself to the conduct to which he had been previously subjected. It was as great a change as could well be imagined. Captain Speke, to his utter astonishment, now reached a country conspicuous for the humanity, hospitality,

and what may be justly termed good breeding of both its sovereign and people. The territory of the King of Karagué is situated in an elevated region two degrees south of the equator, to the west of the Victoria Nyanza, but separated from it by a small intervening kingdom. This prince, hearing of the approach of white travelers, sent officers with maces, the insignia of authority which commanded universal respect, to welcome the strangers to his kingdom, and to escort them with all honor to his palace. As they advanced into the interior of the country their astonishment increased; the people were every where respectful, and the village chiefs attentive. We are now introduced to King Rumanika, the courteous barbarian—a model of good manners and good taste, and, in the truest sense of the word, a gentleman, ruling his people with justice, mingled, perhaps, with a little African severity. The description of this African chief and of his court forms one of the most singular and attractive chapters in Captain Speke's *Journal*. The first reception is thus described:

"Here, as we entered the State reception room, we saw sitting cross-legged on the ground, Rumanika, the king, and his brother, Nnanaji, both of them men of noble appearance and size. The king was plainly dressed in an Arab's black choga, and wore for ornament dress stockings of rich colored beads and neatly-worked wristlets of copper. Nnanaji, being a doctor of very high pretensions, in addition to a check cloth wrapped round him, was covered with charms. At their sides lay huge pipes of black clay. In their rear, squatting quiet as mice, were all the king's sons, some six or seven lads, who wore leather middle coverings and little dream charms tied under their chins. The first greetings of the king, delivered in good Kisúahili, were warm and affecting, and in an instant we both felt and saw we were in the company of men who were as unlike as they could be to the common order of the natives of the surrounding districts. They had fine oval faces, large eyes, and high noses, denoting the best blood of Abyssinia. Having shaken hands in true English style, which is the peculiar custom of the men of this country, the ever smiling Rumanika begged us to be seated on the ground opposite to him, and at once wished to know what we thought of Karagué, for it had struck him his mountains were the finest in the world; and the lake, too, did we not admire it? Then laughing, he inquired—for he knew all the story—what we thought of Suwarora, and the reception we had met with in Usui. When this was explained to him, I

* Nyanza is the general native term either for a lake or large river.

showed him that it was for the interest of his own kingdom to keep a check on Suwarora, whose exorbitant taxations prevented the Arabs from coming to see him and bringing things from all parts of the world. He made inquiries for the purpose of knowing how we found our way all over the world. This of course led to a long story, describing the world, the proportions of land and water, and the power of ships which conveyed even elephants and rhinoceros—in fact all the animals in the world—to fill our menageries at home, etc., etc., as well as the strange announcement that we lived to the northward, and had only come this way because his friend Músa, had assured me without doubt that he would give us the road on through Uganda. Time flew like magic, the king's mind was so quick and inquiring, but as the day was wasting away, he generously gave us our option to choose a place for our residence in or out of his palace, and allowed us time to select one. We found the view overlooking the lake to be so charming that we preferred camping outside, and set our men at once to work cutting sticks and long grass to erect themselves sheds.

"One of the young princes, for the king ordered them all to be constantly in attendance on us, happening to see me sit on an iron chair, rushed back to his father and told him about it. This set all the royals in the place in a state of high wonder, and ended by my getting a summons to show off the white man sitting on his throne, for of course I could only be, as all of them called me, a king of great dignity, to indulge in such state. Rather reluctantly I did as I was bid, and allowed myself once more to be dragged into court. Rumanika, as gentle as ever, then burst into a fresh fit of merriment, and after making sundry enlightened remarks of inquiry, which, of course, were responded to with the greatest satisfaction, finished by saying with a very expressive shake of the head, 'Oh, these Wazungü, these Wazungü!* they know and do every thing.'"

The good taste of this chief in not asking for any one of the rare articles which were displayed before him, both surprised and delighted his visitor. His sons were as polite in their manners as a thoroughbred Englishman. All were pleased at the presents which were given to them, but asked for no more. The king sent to say that the "Raglan coat" was a marvel, and the scarlet broadcloth the finest thing he had ever seen. The minister, a keen sportsman, having hinted that the present of a gun to himself would be highly appreciated, received a severe rebuke from the king for his want of delicacy, and nearly lost his head for the offense.

Rumanika, like all the African kings,

possesses a taste for music, and sent the state band to entertain his guest. The art must have made some progress in Karagué, for we observe in the wood-cut representations of instruments which bear a considerable resemblance to clarionets, oboes, pan's-pipes, and harps: there are also harmonicons composed of bars of metal forming scales, and struck with a piece of iron, and drums of different sizes and forms. The effect of the whole is described as much resembling that produced by the regimental Turkish bands. Great intelligence was displayed by this polished chief in his inquiries relating to the European world and its wonders; but the childishness of the African character was characteristically shown in an eagerness for toys. The king was transported with delight at a "jumping jack," which Captain Grant had made for the amusement of his children, appropriated it himself, and wished one made as large as life; but he begged, above all things, that he might be supplied from England with an American clock in the form of a man, made to wind up behind and with eyes rolling at every beat of the pendulum, a "jack in the box," a china milk-pot in the form of a cow, carriages and horses, and—a railway. The king, having avowed that he had no idea of a God or a future state, was pressed to state what advantage he expected from sacrificing a cow yearly at his father's grave. He laughingly replied that he did not know, but hoped to be favored with better crops if he did so. He also placed pombé and grain, he said, before a large stone on the hill side, although it could not eat or make any use of it. No one in Africa, as far as he knew, doubted the power of magic and spells.

We are next introduced to the powerful King of Uganda, whose territory forms the most important State in the once great but now divided kingdom of Kittara. Some particulars respecting this country, but derived chiefly from oral sources, were obtained by Captain Burton, on his visit to Kazé in 1858, and were briefly noticed in a former number of this Review.* Captain Speke gives us his experiences of a long residence at the court of this African potentate, whose territory extends for a great distance along the western shore

* White men.

* No. 218. The army of Uganda, Captain Burton heard, amounted to 300,000 men.

of the Victoria Nyanza. It was considered of the greatest importance to acquire the favor of this prince. From no other country could Captain Speke hope so easily to explore the great lake and determine the problem in the hope of solving which the expedition had been sent out. In his despair, in consequence of his numerous disasters, of being able to reach that kingdom, he had formed the bold resolution of striking off to the north from Kazé, and arriving by his former route at the southern extremity of the lake, there constructing a raft, and embarking on a voyage of discovery in search of a northern outlet. From the necessity of so hazardous an enterprise he was happily relieved, and he was enabled to resume his route to Uganda. On approaching the kingdom, he crossed the river Kitangulé, which, as he had heard in 1858, flows into the Victoria Nyanza. He describes it as a noble stream eighty yards broad, and running in a deep channel below the surface of the country with a velocity of from three to four miles an hour. It flows from the Mfumbiro Mountain, ten thousand feet high, one of the Mountains of the Moon, which may give birth, it has been conjectured, both to the Congo and the Nile. The whole country is described as surpassingly rich, and "a perfect paradise for negroes," whose gardens are kept in excellent order. The palace of the King of Uganda consists of a collection of gigantic huts, such as Captain Speke had never before seen in Africa. On the day following his entrance into the capital, the king held a levee for the reception of his English visitor. Courtiers of high dignity, and dressed with scrupulous care, stepped forward to greet him. The royal band played in the adjoining court, as was customary on state occasions. The dress of the courtiers and people of Uganda is regulated with a strict regard to propriety, and any, even an accidental, deviation from decorum in the presence of the king is punished with instant death. Captain Speke calls the people of Uganda the French of Africa, from the polish and refinement of their manners. It was intimated to him that he would be expected to comply with the usual custom of prostration on presentation; but following the example of Lord Amherst at the court of Pekin, he declined to be received unless in a manner conformable to the usages of his own

country, and the point of etiquette was graciously waived. The young king's character is described as a mixture of childish frivolity and uncontrollable passion. It is a singular illustration of the state of society in this portion of Africa, that no regular provision was made by the king for the maintenance of his visitors; they were not even allowed to purchase provisions for their daily wants, but were told to help themselves from whatever Uganda contained. The leader of the expedition was thus placed under the painful alternative either of starving or sanctioning acts which appeared to him like the plunder of a helpless population. The politeness of this young barbarian king was often exhibited in striking contrast to his ferocity. He even showed himself capable of friendship, and appears to have treated his guest with generosity and even affection. Captain Speke taught him to shoot, and under his guidance he became a skillful sportsman: taking his first lessons on cows in the palace inclosure, he was able at length to bring down vultures on the wing. The possession of fire-arms seems to have almost deprived him of reason. At one of his levees he loaded a carbine with his own hands, and giving it to a page, told him to go out and shoot a man in the outer court, which was no sooner done than the boy returned to announce his success, "with a smile of glee such as might be reflected in the face of a boy who had just robbed a bird's nest or caught a trout." On sending a bullet from a Whitworth rifle through sixteen of the country shields, arranged behind each other, a great idea was suddenly generated in the barbarian mind: "I shall not go to war again," he said, addressing his attendants, "with bows and arrows; I must have guns."

Savage life has probably never been seen in all its fantastic phases and terrible realities more completely than during the compulsory residence of Captain Speke at the court of the young King of Uganda. In the midst of revelry, and while apparently at the height of enjoyment, he would, in a fit of sudden caprice, order a young and beautiful wife for instant execution. Captain Speke interceded for the life of one, and saved her; but he could not venture to interfere in domestic affairs a second time. It must have required no small amount of tact to evade the consequences of the occasional sallies of anger

on the part of this wayward and impetuous young king. One day more than thirty wives were being driven to the slaughter, when the king, observing his visitor's distress at the shocking spectacle, laughingly asked whether he would like any of them for himself. Captain Speke would assuredly have gladly rescued the whole from their impending fate, but as it did not enter into his plans to form a harem in Uganda, he could only select one, whom he handed over to the commander of his escort.

Music, in which the king was a considerable proficient, had certainly not tamed his savage breast, or imparted gentleness to his character. He was frequently found by his guest playing the flute or clarinet in concert with his numerous brothers; and the royal musician sometimes condescended himself to lead the drums of the household band. One of the most extraordinary customs of this extraordinary country is the immolation of all the brothers of the reigning king, on the occasion of his coronation, with the exception of one or two, who are spared in order to prevent a failure of the royal line. Captain Speke happily did not witness this event, but it was to take place shortly after he left Uganda. On the occasion of the solemnity, the thirty brothers, with whom the king lived on terms of apparent affection, and whom he constantly associated in his musical recreations, were to be publicly burned to death. They looked forward to their fate with indifference as inevitable by the constitution of Uganda. The cause of this horrible custom is the existence of polygamy, which, giving rise to a large family of half-brothers, produces numerous pretenders to the throne. One of the first requests which even the humane and gentle Rumanika made to Captain Speke, was for some powerful charm which would put an end at once to a brother and to the war in which he was then engaged.

It required considerable address on the part of Captain Speke to extricate himself from the hospitable captivity in which he was held by the King of Uganda. He might even now have been an honored officer at his court, and, perhaps, raised to the dignity of master-general of the ordnance, if his store of ammunition had not been limited. To the assurance that as soon as a road was opened from the Nile to his dominions the king would receive

inexhaustible supplies of powder and shot, our traveler is probably indebted for his safe return to England.

Notwithstanding Captain Speke's long residence at the court of Uganda he was not permitted to avail himself of his close proximity to the Victoria Nyanza to explore it thoroughly, and thus obtain an accurate knowledge of its shores. With the exception of the Kitangulé, which he crossed on his route to Uganda, and which he describes as equal in dimensions to the Nile, he saw no considerable river which flows into the Victoria Nyanza, nor did he hear of any. The Luajerri, which he represents as a huge rush-drain, three miles broad, and fordable when he crossed it to within a short distance of the right bank, is, however, said to issue from the lake, and to fall into the Nile. If it possesses a current and should really unite with the river which flows over the Ripon Falls, it may be questioned whether it has not the best title to be considered the principal affluent of the lake. He had before passed another "rush-drain," which he calls Mworango River, three hundred yards in span, and in which he found a large volume of water flowing north. He expressed himself at the time as delighted at this "very surprising fact," feeling that he was really on the northern slope of the continent, and had apparently found one of the branches of the Nile's exit from the Nyanza.* If this river carries off—as Captain Speke says it does—a portion of the surplus waters of the lake, the Luajerri with a much larger channel may do so too. But we reserve the discussion of this and some other hydrographical questions until we have followed Captain Speke to the end of his adventurous journey.

The social state of Uganda appears to be one of great material prosperity and happiness, the effects of royal caprice being probably confined to the court and its precincts. Order seems to be established throughout the kingdom; food is abundant; and cheerfulness and good humor prevail. The population, as well as that of the contiguous kingdom of Karagué, is doubtless susceptible of a much higher civilization; but the dark and debasing superstitions of these members of the great African family are, and must long be, great obstacles to their fur-

*P. 279.

their progress. The religion of Uganda and of Karagué consists, not in the adoration of a supreme and beneficent Being, but in the propitiation of malignant powers ever desirous of inflicting evil. Rulers and people are alike slaves to the most childish fears. The former pass hours over horns filled with magic power, in the hope of divining the future. Magic is the science of savage life, and in these kingdoms it is held in universal esteem. Policy is regulated by omens, and kings tremble at the cries of animals and the inauspicious flight of birds. The chief of Karagué, the most intelligent and enlightened of these African princes, told Captain Speke that if on marching to battle he heard the bark of a fox, he would immediately order his army to retreat. The art has its regular professors, who are in alliance with the State; private sorcery is forbidden, and those discovered practicing it are condemned to death and their property is confiscated.

The ethnology of the races dwelling near the African equator is a subject of great interest. Captain Speke is of opinion that the people collectively called Wabūma, who occupy a large portion of this part of the African continent, are an offshoot from the Abyssinian stock. They differ in feature and in character from the simple negro type, although there has been a considerable intermixture of races. The pure negro type is exceptional in Africa. "A large portion," says Mr. Brace, in his admirable work, *The Races of the Old World*,* "of the brown and black tribes of Northern and Eastern Africa belong to the same family as that which first originated commerce, invented the alphabet, produced the sublime Hebrew poetry and Arabian science, and which was through many ages in one of its branches the especial medium chosen by Providence for transmitting the most elevated religious inspirations to mankind, and in which the divine manifestation of Jesus Christ was made. Another group of people brown and black—many fully black—are descendants of that family which erected the ancient empires on the Euphrates, and which, unknown centuries ago, built the Pyramid-tombs on the Nile, and founded the gloomy art, the artificial civilization, and the science of Egypt. The families of Central Africa have not, indeed, all

been classified, and no absolute proof can be presented of their identity of origin with the rest of the human race, but their languages show no radically different features. The laws of human speech apply to them, as to all other tongues; they are founded on the same principles, they are sometimes conspicuous for their richness and flexibility, and a great scholar of Germany (Pott) has ranked many of them among the noble tongues of more cultivated races." The African languages, however, Captain Speke found to possess radical differences north and south of the equator.

The great object of Captain Speke before leaving Uganda was to obtain the permission of the king to explore the Victoria Nyanza, and particularly to visit the spot from which, according to native information, a great river issued, and which he felt certain must be the Nile. The "admiral" of the lake, however, put his veto upon this plan, on the pretext that dangerous shallows impeded the navigation. The only course which then remained was to proceed by land to the banks of the supposed river, and then ascend it to its point of departure from the lake. On the 21st of July, 1863, he accordingly stood, he says, on the brink of the magnificent stream, from six hundred to seven hundred yards wide, which flowed between high grassy banks, with noble trees and plantain-groves in the distance. Proceeding southward by the left bank, his guides led him to the Ripon Falls, but the lake itself was there shut out from the view by hills and by the high ground about the Falls. With respect to the distance of the Ripon Falls from the lake, Captain Speke's *Journal* does not afford any information.

It is to be regretted that Captain Speke was prevented from proceeding to the north-eastern side of the Victoria Nyanza, to ascertain whether there exists any connection between the great lake and another lake from which a considerable river is said to flow also northward. It would also have been a most important addition to our geographical knowledge to have obtained some accurate information respecting the Asua river, which Captain Speke considers a great tributary of the Nile, entering its channel at about four degrees north latitude. It would have been the more interesting since the Asua has been thought by many to be

* London. 1863.

the largest branch of the Nile; and he had himself suggested that Mr. Petherick should ascend it, in order to ascertain whether it possessed any connection with the Victoria Nyanza. It is a striking fact in connection with this river that the Hindoos, who certainly had some kind of intercourse both with the northern and southern shores of the Victoria Nyanza, should have called the source of the Nile "Amara"—the name of a territory bordering on the lake to the northeast.* Dr. Krapf, moreover, heard from natives that beyond the Asua river, in the Galla country, there was another lake, navigated by very large vessels, and that somewhere in the same neighborhood there was an exceedingly high mountain. Dr. Krapf says he made the acquaintance of a merchant from Umbo, a country two days' journey from the river Dana; who told him that at the foot of the snow-capped mountain Kenia, from which the Dana and the Tamburi rivers flow into the Indian Ocean, another river, the Nsaraddi, takes its course towards a lake called Baringa, the end of which could not be reached under a hundred days; "and now," adds Dr. Krapf, "we know almost for certain where the sources of the Nile are to be looked for, namely, in the lake Udurkenia, from which flows the Nsaraddi; this, again, flowing through the Baringa." The king of the Bari also told the officers of the Egyptian Expedition that the Nile came from the southeast, its source being a distance of one month's journey.

Captain Speke thus sums up the result of his discoveries:

"From this southern point, round by the west, to where the great Nile stream issues, there is only one feeder of any importance, and that is the Kitangulú river; whilst from the southernmost point, round by the east to the strait, there are no rivers at all of any importance, for the traveled Arabs one and all aver that from the west of the snow-clad Kilimandjaro to the lake, where it is cut by the second degree, and also the first degree of south latitude, there are salt lakes and salt plains, and the country is hilly and so scantily watered that they had to make long marches in order to find water. Dr. Krapf, when he obtained a sight of the Kenia Mountain, heard from the natives there that there was a salt lake to its northward, and he also heard that a river ran from Kenia towards the Nile. If his informa-

tion was true on this latter point, then without doubt there must exist some connection between his river and the salt lake I have heard of, and this in all probability would also establish a connection between my Salt Lake and his Salt Lake, which he heard was called Baringa.* In no view that can be taken of it, however, does this unsettled matter touch the established fact that the head of the Nile is in three degrees south latitude, where in the year 1858 † discovered the head of the Victoria Nyanza to be."

It may be quite true that no river flows into the Victoria Nyanza from Kilimandjaro, but it is by no means certain that a great stream does not flow into it, or possibly into the Baringa lake, from the slopes of Kenia. The western shore of the Victoria Nyanza is not more than one hundred and fifty miles from the snow-capped Kenia;† and both the Nyanza and the Baringa may be partially fed by rivers which have their sources on that mountain. An exploration of the watershed of this country, together with a measurement of the quantity of water annually carried down by any river which flows from the northern flank of Kenia, is necessary in order to complete our hydrographical knowledge of the basin of the Nile.

Retracing his steps from the Ripon Falls down to the left bank of the river, Captain Speke crossed twelve considerable streams—the largest of which, the Luajerri, he had before seen, and which he reasserts issues from the Nyanza—and proceeded down the river in boats to visit the capital of the King of Unyoro. The territory of this potentate is the largest in this quarter of intertropical Africa, but it is only a fragment of the great kingdom of Kittara, which has been subjected to some political convulsion which has shattered it into several independent or tributary States. A sort of rude balance of power is maintained among these African kingdoms, but the sovereign of Unyoro is suspected by the minor potentates of entertaining ambitious designs, and of desiring a rectification of his frontiers by a reërrangement of the map of Eastern Intertropical Africa. The western boundary of this kingdom is formed by the Little Luta Nzigé Lake. It is supposed to constitute a very important feature in

* It is not to be supposed that the water of this lake is salt, but that deposits of salt exist on its shores.

† Sir R. Murchison's Address to the Royal Geographical Society in 1859.

* See *Asiatic Researches*, vol. iii.

the hydrography of the basin of the Nile. Captain Speke conjectures it to be a great backwater to the river, and that, after being surcharged with the tropical floods, it pours its overflow into the Nile. The exact position and function of this lake have not, however, been ascertained. The King of Unyoro is represented as an importunate beggar and an extortioner. The first reception of Captain Speke and his companion by Kamrasi, and the appearance of the king, are thus described:

"Sitting on a low wooden stool, placed upon a double matting of skins—cows' below and leopards' above—on an elevated platform of grass, was the great King Kamrasi, looking enshrouded in his mbügü dress like a pope in state, calm and actionless. One bracelet of fine twisted brass wire adorned his left wrist, and his hair, half an inch long, was worked up into small peppercorn-like knobs, by rubbing the head circularly over the crown of the head. His eyes were long, face narrow, and nose prominent, after the true fashion of his breed, and though a finely made man, considerably above six feet high, he was not so large as Rümanika. A cow-skin stretched out and fastened to the roof acted as a canopy to prevent dust falling, and a curtain of mbügü concealed the lower parts of the hut, in front of which, on both sides of the king, sat about a dozen head men.

"We entered and took seats on our own iron stools, whilst all the presents were placed upon the ground before the throne. As no greetings were exchanged, and all at first remained as silent as death, I commenced, after asking about his health, by saying that I had journeyed six long years (by the African computation of five months in the year) for the pleasure of this meeting. The purpose of my coming was to ascertain whether his Majesty would like to trade with our country, exchanging ivory for articles of European manufacture, as, should he do so, merchants would come here in the same way as they went from Zanzibar to Karagüe.

"Kamrasi, in a very quiet, mild manner, instead of answering the question, told us of the absurd stories which he had heard from the Waganda, said he did not believe them, else his rivers deprived of their fountains would have run dry, and he thought if we did eat hills and the tender parts of mankind, we should have had enough to satisfy our appetites before we reached Unyoro. Now, however, he was glad to see that although our hair was straight, and our faces white, we still possessed hands and feet like other men."

The most serious loss which Captain Speke sustained during his detention by this barbarian was his only remaining chronometer, which the king insisted must be a magical instrument of irresistible

power. On its being opened in the presence of the court the attendants averted their faces with terror on the first glance of the mysterious mechanism. Kamrasi is represented as of a mild disposition compared with King Mtésa, whom he always alludes to when ordering his subjects to be flogged, reminding them that if they were in Uganda their heads would suffer instead of their backs.

Escaping from the King of Unyoro, who would not suffer any of his subjects to see his white guests, Captain Speke and his companion worked their way slowly through the Chopi territory. At Koki, a short distance from Kamrasi's palace, the river bent considerably to the west, taking a wide sweep and narrowed to only two hundred yards, with an average depth of from two to three fathoms. Continuing his course due north, and leaving the river on his left, he came at length again in view of the Nile and also of the river Asua. The bed of the Asua appeared, he says, in the distance "very large." When he next struck the Nile it was running "like a fine Highland stream" between gneiss and mica-schist hills in Kuku. Again it trended to the west. The Asua, a deep but at that season not very broad stream, was then forded. This great river, as we have before remarked, has been considered by many to be the main branch of the Nile. Where it comes from is as yet a mystery; it probably rises on the Kenia mountain range, and its course being deflected too far to the north to reach the Victoria Nyanza, it falls into the supposed Nile at about three degrees and forty-two minutes north latitude.

Captain Speke's description of the appearance of the Bahr el Ghazal at its junction with the Nile differs essentially from that given by the officers of the Egyptian Expedition and by the Baroness van Capellan and the other adventurous Dutch ladies who entered it in their small steamer and are now engaged in exploring it. The commander of the Egyptian Expedition would have decided without hesitation in favor of the Bahr el Ghazal as the true Nile and would have proceeded up it with his flotilla had not his orders been imperative to direct his explorations to the south.* Captain Speke says he found the Bahr el Ghazal "only a small piece of

* See *Quarterly Review*, No. 227.

water, resembling a duck pond, buried in a sea of rushes." There is so important a difference between this statement and that of the other persons who have entered this great mere, that further evidence is necessary before any positive conclusion can be arrived at with respect to its hydrographical importance. The Giraffe and the Sobat, although considerable and even imposing streams, are pronounced unworthy of being brought for a moment in comparison with the Nile; and the pretensions of the Bahr el Azrek to be considered the principal stream have long since been disposed of. Captain Speke strenuously contends that the river which issues from the Victoria Nyanza above the Ripon Falls is the true and parent Nile; "having viewed," he says, "all its great tributaries in the dry season, which is the best time for estimating their relative perennial values."

We have now followed Captain Speke through his long and adventurous journey. It remains to consider how far his alleged solution of the great geographical problem can be accepted as final and complete.

In an attempt to discover the source of any river, it is, in the first place, necessary to define its basin. The basin of a river, we need not inform our readers, consists of those declivities, considered collectively, from which flow all the streams and rivulets which discharge themselves into one particular river, and are therefore called its hydrographical region or basin. It frequently happens that the basins of two rivers almost touch, as is probably the case with those of the Congo and the Nile. The basin of a river being determined, we have next to ascertain the principal arms which unite to form the main stream: we must, therefore, trace to their heads the several smaller branches which form those arms; and when we have done this, we shall then, but not before, be competent to decide which of all those numerous ramifications possesses the fairest claim to be regarded as the fountain-head. The possible sources of the Nile are, therefore, as Dr. Beke has shown,* all the streams which rise upon the extreme limits of the basin of that river. It is important, moreover, to note with accuracy the hydrographical masses or groups of moun-

tains which surround any important stream. Lakes which receive and discharge streams of water constitute the basins of those streams. They possess, as a general rule, only one outlet, which generally takes its name from that of the principal river which flows into it, although it can not be said with strict propriety that a river traverses a lake, since its waters, after entering it, necessarily mingle with and form a portion of its mass.

Taking these geographical axioms for our guide, we must consider whether the problem which Captain Speke took in hand has been yet completely solved. He discovered in 1858 a vast lake, possessing, he now informs us, three outlets, all eventually uniting in one stream. Which, in the first place, is the principal effluent of the lake? Captain Speke did not see any part of the course of the Nile above the Ripon Falls, nor does he state their distance from the Napoleon Channel or from the lake. A considerable river, or more than one, it is clear, issues from the Victoria Nyanza; but can the conclusion yet be received with unhesitating acquiescence that this river, or any one of them, is the Nile? To put the question beyond all further controversy, a measurement or approximative estimate should, we conceive, be made of the annual flow of water from the Bahr el Ghazal, the Asua, the Sobat, and perhaps other great rivers, and their effect upon the periodical rise of the Lower Nile; and the proper time for ascertaining the relative real magnitude and importance of these rivers is not, as Captain Speke assumes, in the dry season, when their streams are feeble and low, but during the period of their fullness and strength. Now, the Bahr el Ghazal is most assuredly a very important agent in the hydrography of the Lower Nile; for, although it presents at times the appearance of a motionless lake, it was found by Mr. Petherick, who entered it in 1858, to possess a channel twenty feet deep, with a perceptible current of a quarter of a mile an hour. But the Nile in several parts of its course very much resembles the Bahr el Ghazal. Captain Speke describes it as presenting in one place the appearance of a huge mill-pond, sullen and dark, and at another as a long lake, varying from two hundred to one thousand yards broad; and it is undeniable that it forms in the dry season, for

* *The Sources of the Nile.* By Dr. BEKE.

hundreds of miles, a series of stagnant pools, and is, as he himself describes it, for a great portion of its course, more like a long pond than a river. Nor, in estimating the hydrographical importance of the Bahr el Ghazal, ought the statement of Herodotus to be overlooked. He says that he was informed that the Nile flowed "from the west and from the setting sun;" and several modern explorers have described the Bahr el Ghazal as a magnificent stream, possessing at times a considerable current. Nor can the pretensions of the Sobat be reasonably overlooked. Captain Speke has himself admitted the probability that its two arms form one great river higher up its course: and Dr. Krapf has stated that at the point where it joins the Baro, in nine degrees north latitude, it is four hundred feet broad, with higher banks and a current greater than the Nile. There has certainly been a tradition that the Nile had its origin in a lake, or chain of lakes, at or near the equator; but, bearing in mind Seneca's description of the sources of the great river—"magnus solitudines pervagus, et in paludes diffusus, gentibus sparsus"—it may be that not one but many lakes contribute their overflow to swell the main stream of the Nile; and we are still in total ignorance with respect to one extensive and probably immense division of its basin, namely, the whole of that portion of it which lies to the west. It may be considered as established that the Victoria Nyanza supplies the Nile with a considerable portion of its water; but whether the true and primary source may not yet be found among the high regions which flank the river on both sides of its upper course is still open for geographical inquiry.

The region of the equator is undoubtedly the source of those abundant rains which supply not only the Nile, but many other rivers of Africa, with their periodical floods. It is, as Captain Speke justly says, the center of atmospheric motion, and there are only two months during the year in which no rain, or very little, falls. There is, however, a remarkable difference in the phenomena which rivers present under the influence of the periodical rains. If a river flows in a direction parallel to the equator, its waters spread themselves with a certain degree of equality over the whole extent of its banks, as in the Orinoco, the Senegal, and

the Niger; if it flows perpendicularly to the equator, the effect of the tropical rains is very unequal in different parts of the river's course, for the flood is carried almost entirely toward the lower region of the stream. This is exactly what happens in the inundation of the Nile. No river beyond the torrid zone is subject, like the Nile, to regular periodical swellings. The overflow which occurs in the temperate zones, arises almost wholly from the melting of snow, and from rain which has fallen among the mountains. In rivers which flow perpendicularly to the equator, as the swell requires time to travel, it occurs at regular but different periods in various parts of the same river. "The height," Mrs. Somerville says, "to which the water rises in the annual floods depends upon the nature of the country, but is wonderfully constant in each individual river where the course is long, for the inequalities in the quantity of rain in a district drained by any of its affluents are imperceptible in the general flood; and thus the quantity of water carried down is a measure of the mean humidity of the whole country comprised in its basin from year to year. By the admirable arrangement of these periodical inundations, the fresh soil of the mountains, borne down by the water, enriches countries far remote from their source. The Mountains of the Moon and of Abyssinia have thus fertilized the banks of the Nile through a distance of twenty-five hundred miles for thousands of years."*

Captain Speke states his belief that the Victoria Nyanza was once much larger than it now is. Undoubtedly a mass of water lying so near to the equator must be exposed to enormous evaporation; and the more a body of water loses in depth, the more it evaporates, for the evaporation of water is, as is well known, in the direct ratio of its surface, and in the inverse ratio of its depth. There are, in all mountainous and marshy countries, numerous traces of small lakes, which have thus been dried up: we might therefore conclude that the same phenomena have occurred upon a much larger scale in Eastern Equatorial Africa. The Victoria Nyanza, like all lakes, is moreover subject to two agencies which must operate in the course of ages in gradually diminishing its area. The largest deposits

* *Physical Geography*, vol. ii.

of fresh water on the globe, the American lakes, are slowly contracting their dimensions under the joint influence of the enlargement of their barriers by erosion and the accumulation of detritus carried into them by their affluents. It has been generally supposed that no lake can have more than one outlet; but if Captain Speke's observations are correct, the Victoria Nyanza presents the peculiarity of at least three outlets at distances respectively off from thirty to forty miles from each other, thus forming, as it were, a reversed delta. It has been assumed that the perpetual wearing away of the banks of an outlet prevents the formation of others. Instances, however, have been recently adduced proving that the Victoria Nyanza is not singular in possessing two or more outlets. The Lake of St. John, in Lower Canada, discharges itself, it is said, by three outlets into the river Saguenay, first by two branches called the "Grande Décharge," and next by a chain of alternate rivers and lakes which join the main stream after a course of fifty miles. An example on a small scale has also been adduced of a Scotch loch possessing two natural outlets.* There appears, therefore, to be nothing inconsistent with hydrographical experience in the fact of two or more rivers issuing from the Victoria Nyanza. The tendency, however, of vast and shallow lakes, swollen by periodical rains, is to subside during the dry season into temporary marshes, and the surface of the Victoria Nyanza must be subject to considerable annual oscillations; it would therefore be both interesting and important to ascertain the effect of those oscillations upon the stream of the effluent which descends the Ripon Falls.

We possess, however, incontrovertible proof that the periodical rains of Upper Ethiopia have not varied for at least five thousand years. Sirius, the dog star, was worshiped by the Egyptians from its supposed influence on the rising of the Nile. According to Champollion, their calendar commenced when the heliacal rising of the star coincided with the summer solstice, the time at which the Nile began to swell at Cairo. "Now, this coincidence," Mrs. Somerville says, "makes, with the nearest approach to accuracy, 3291 years before the Christian era; and

as the rising of the river still takes place precisely at the same time, and in the same manner, it follows that the quantity of rain which falls in the basin of the Nile has not varied for five thousand years." This basin occupies, it has been estimated, an area of at least five hundred thousand square miles. The cause of the retardation of the inundation is not yet accurately known, but the inundation itself can be satisfactorily explained, as has been frequently pointed out, by the annual overflow of a vast interior watery plateau, the exact configuration and limits of which yet remain to be ascertained. Many large, and doubtless innumerable smaller, streams pour their tributary floods into the Nile. Many of these streams are probably feeders of the Victoria Nyanza; but as almost the whole of that lake lies south of the equator, it must be subjected to conditions with respect to rainfall different from those of the country to the north, from which the principal supplies of the Nile are in all probability derived.

The rains commence at Kazé, five degrees south latitude, about the 15th of November, and end on the 15th of May, during which period they fall almost continuously. About two and a half degrees farther north, at the southern end of the Victoria Nyanza, the rainy season commences somewhat later. At Karagué, upon the western shore of the lake, the rainy season lasts from October to June, when the dry season sets in. The altitude of the Nyanza, and the argillaceous color and the sweetness of its waters, suggest the inference, Captain Burton says, that it may be one of the feeders of the Nile; and it may be right to quote his reasons for thinking that it is not the chief source of the annual inundation, and therefore not of the Nile itself. "About the summer solstice," he says, "when the rains cease in the regions south of and upon the equator, the White Nile begins to flood. From March to the autumnal equinox (September) it continues to overflow its banks till it attains its greatest magnitude, and from that time it shrinks through the winter solstice (December) till March. The Nile is therefore full during the dry season, and low during the rainy season south of, and immediately upon, the equator. The inundation is synchronous with the great falls of the northern equatorial regions,

* See *Athenæum* for July 18th, Nov. 28th, and Dec. 19th, 1863.

which extend from July to September, and is dependent solely on tropical rains. It is therefore probable that the true sources of the 'Holy River' will be found to be a network of runnels and rivulets of scanty dimensions, filled by monsoon torrents, and perhaps a little swollen by melted snow on the northern parting line of the Eastern Lunar Mountains." * "In the map appended to M. Brun Rollet's volume," Captain Burton adds, "the large water to the west of the Padongo tribe, which clearly represents the Nyanza, is made to drain northwards into the Filtri lake, and eventually to swell the main stream of the White river. The detail supplied by the Egyptian expedition, which about twenty years ago ascended the White river to $3^{\circ} 22' N.$ lat. and $31^{\circ} 30' E.$ long., and gave the general bearing of the river from that point to its source as southeast, with a distance of one month's journey or from 300 to 350 miles, would place the actual sources $2^{\circ} S.$ lat. and $35^{\circ} E.$ long. or in 2° eastward of the southern creek of the Nyanza lake. This position would occupy the northern slope of the Lunar Mountains, the upper watershed of the high region whose culminating apices are Kilimandjaro, Kenia, and Daemgo Engai, the first supposed to be at least twenty-one thousand feet above the level of the sea, and consequently three thousand or four thousand feet above the line of perpetual congelation, and would admirably explain the two most ancient theories concerning the source of the White river; namely, that it rises in a snowy region, but its inundation is the result of tropical rains."

We have little or no exact information as to the amount and duration of the rainfall in the region of the Victoria Nyanza, but Captain Speke incidentally supplies a fact which may be thought to strongly corroborate the hypothesis of his former companion, in reference to the flooding of the Nile. The great rush-drains or rivers which Captain Speke crossed on his route to Mtesa's palace were, he was told by the natives, at certain seasons so flooded that they could not be forded, but, from some unaccountable cause, they were always lowest when most rain fell in Uganda;—a conclusive proof, we think, that the Victoria Nyanza

must receive its chief supply of water from the regions far to the south of the equator, and is consequently fullest at a time when very little rain falls in the regions to the north from which the Nile necessarily derives the largest portion of its flood.

The periodical rise of the Nile is certainly not, in any considerable degree, owing to the melting of the snow on those mountains which have now been ascertained to exist at no great distance from the equator in Eastern Intertropical Africa; for the power of the sun is there so nearly equable throughout the year that it must operate in supplying the streams which descend from those mountains with nearly the same amount of water at all seasons. There has been a constant tradition that the mountains in the vicinity of the head waters of the Nile are covered with perpetual snow. Ptolemy repeatedly alludes to the fact. Philostratus says that "he does not mean to gainsay the snows of the Ethiopians on the hills of the Catadupi." * Bruce often heard of the snowy regions in the vicinity of the equator. The missionaries Rebmann and Krapf were the first Europeans who saw these stupendous mountains, and their existence has since been indisputably established by the partial ascent of the great Kilimandjaro by the Baron von Decken. The pertinacity with which the fact of mountains in Eastern Equatorial Africa being crowned with perpetual snow has been denied is unaccountable. Unless it is now intended to impugn the veracity, or to question the powers of scientific observation, of a Hanoverian nobleman and officer of high attainments, the question must be considered as settled, for there can not remain a scintilla of doubt in any unprejudiced mind on this most interesting subject. Why there should have been any is not easy to understand, for the limit of perpetual snow is not a mere function of geographical latitude nor of mean annual temperature. In the Andes of Quito, directly under the equator, the limit is 15,790 feet above the sea. On the southern declivities of the Himalaya the snow limit is found at an elevation of 12,180 feet, on the northern declivity at 15,000 feet. Neither the tropics, nor even the equator itself, is the situation, as was long believed and taught,

* *Lake Regions of Central Africa*, vol. II. p. 218.

* See Rawlinson's *Herodotus*, vol. II. p. 27.

where the snow limit attains its highest elevation. "The phenomenon," says Humboldt, "is an extremely complicated one, and depends generally on various relations of temperature, moisture, and mountain configuration. While the snow line in South-America reaches a height under the equator which equals that of the summit of Mont Blanc, and in the high lands of Mexico, near the northern tropics, in latitude 19° north, descends from that by a quantity equal to about 960 feet, it rises in the Southern tropical zone (lat. $14\frac{1}{2}^{\circ}$ to 18° south) and in the western or Chilian Andes, 2500 feet higher than under the equator, at Chimborazo and Antisana, not far from Quito."*

Kilimandjaro, as seen by Dr. Krapf, had a dome-like summit; but the summit of Kenia, which lies farther to the north, presents the form of a lofty roof, over which two peaks arise like pillars or horns. These peaks, he says he has no doubt, are seen by the inhabitants of countries bordering on the northern latitudes of the equator; and he thinks there can be no doubt that the waters which Kenia throws off to the north run toward the basin of the Nile. Baron Von Decken has recently ascended Kilimandjaro to the height of nearly 14,000 feet, and ascertained by trigonometrical measurement that the principal peak attains an altitude of 20,065 feet, and the other upwards of 17,000 feet. The altitude thus determined being greatly above the limit of perpetual congelation, fully accounts for the existence of perpetual snow; and thus has been conclusively established the existence of a new and grand phenomenon in the physical geography of Africa. The meteorological observations made by Baron Von Decken are important. The rainy season in Eastern Africa was found to commence in the month of June, and to extend through July, August, and September, but near Kilimandjaro it extended over ten months of the year. Whatever may be the importance of these stupendous equatorial snow-covered mountains, that of Kenia especially, in the hydrography of the Nile, their discovery forms one of the geographical triumphs of the age. Rising in rival majesty not from arid plains or desolate sierras, but from a country clothed with the most exuberant tropical vegetation, they must give to the

scenery of that part of Africa a character of surpassing magnificence.

The physical characteristics of the countries through which the two greatest rivers of Africa run, present as marked a contrast to each other as the populations which cluster on their banks. The Niger, equal in magnitude to the Nile, flows through a country rich in the most splendid tropical vegetation, and abounding with every thing than can conduce to the well-being of man, but that country has never yet been occupied except by savage tribes, which have remained for ages in a condition of brutal degradation. The cause of this contrast between the two great rivers of Africa was simply the direction of their respective courses. The one flows into a sea long the center of commerce and civilization; the other into a great and, for ages, a lonely and unknown ocean.

A spontaneous civilization has arisen in several parts of Eastern Intertropical Africa, of which not the least interesting are those native kingdoms which have been discovered by Captain Speke and his gallant companion. There agriculture has made respectable progress; some rude essays have been attempted in the arts; and even manners have acquired a certain refinement. It is a melancholy consideration that the only intercourse which these primitive nations have yet had with the civilized world has tended rather to depress than to raise them in the scale of existence. There, as on the Atlantic coast, civilized man has introduced the scourge of the African race. In the west of Africa it is the European who has brought slavery in his train; in the East it is the Arab who has still further debased and degraded the indigenous native of the soil. There, as in the West, the stimulus imparted to native wars, by conferring a money value on man, has opened a vast slave market, of which the frequenters and best customers are the subjects of civilized States. This infamous "institution" has, in Eastern Africa as elsewhere, enslaved not only the body, but the soul. It has subverted the very foundation of human character by destroying even the consciousness of natural independence; for, with a touching but perverted sense of justice, the slave considers that he would be acting dishonestly, after having been bought, if he should run away from his master, because he would thus bring on

* Humboldt's *Cosmos*, vol. I. p. 363.

him pecuniary loss.* This humble acquiescence in the greatest wrong which man has ever inflicted on man is a proof how completely slavery has benumbed the moral faculties and darkened the reason of its victims in Eastern Africa; for in physical strength, as in numbers, they are so superior to their masters that, should they resolve to rebel, they might scatter them as chaff before the wind and sweep them from the face of the earth.

It will be inferred from the foregoing remarks that we still entertain a doubt whether the great geographical enigma of ages has yet been satisfactorily resolved. On the return of Captains Speke and Grant to their native land, there was a general and perhaps too hasty a disposition to accept all the conclusions at which they had themselves arrived. There are, as we have shown, several important geographical and hydrographical questions to be determined before an unhesitating acquiescence can be accorded to the statement of Captain Speke that in 1858 he found the "top head of the Nile at the southern end of the Victoria Nyanza," or before we can accept as an established geographical fact that the river which issues from it is indeed the great stream whose sources have baffled the curiosity of mankind from the remotest period of history.

The personal adventures of Captain Speke necessarily constitute the prominent features of his *Journal*, and they may seem perhaps to throw the services of his coadjutor and companion somewhat into the shade; but we have every reason to believe that he fully recognizes the assistance which he derived from his companion whenever illness did not deprive him of his services. Captain Grant contributed, as may be seen, largely to the illustrations which adorn the *Journal*; and he has not only enriched the science of botany by his researches, but the Museum of Kew by a large collection of previously unknown plants; and he may be assured that his countrymen recognize no less in himself than in his companion those great and sterling qualities which make the British officer an impersonation of all that is daring and devoted in the service either of science or of the State.

The services which the explorer renders

to mankind are not, however, confined to the world of science. In bringing to the knowledge of civilized nations communities the very existence of which was previously undreamed of, he makes them objects of interest, and they become the subjects of benevolent exertion. By bringing to light the resources of vast and hitherto unknown countries, he tempts commerce—the sure harbinger of civilization—into regions which would otherwise remain permanently shrouded in darkness; he communicates an impulse never to be arrested until it has accomplished the work to which it is unconsciously set, and thus becomes the secondary instrument for imparting the blessings of purer morals and a purer faith to millions of the human race. The countries recently visited, it may be almost said discovered, by Captain Speke and his companion, are even now attracting the attention of the power most interested in their future. His Highness the Viceroy of Egypt has already dispatched a considerable military force to Khartum, as a reinforcement to the troops now stationed there; and he has announced his determination not only firmly to establish his authority in those remote districts which border on the Upper Nile, but to suppress the slave trade, in which even his own officers, removed from the surveillance of their government, are suspected of being largely engaged. For this purpose he is about to establish a river police, provided with swift and well-armed galleys, which will patrol the Nile as far as it may be found navigable, for the purpose of boarding suspicious vessels, and of liberating any slaves which may be found in them. A railway, and the telegraph wire, to be extended to Khartum, will speedily follow; and we may expect that even Gondokoro will at no distant day be thus connected with the capital of Egypt. Facilities for approaching the great fertile regions of Equatorial Africa will then have been so greatly increased, that many years can not elapse before their valuable products will be accessible to commerce, and the countries to which Captain Speke has introduced us will be regularly supplied with European manufactures. Their rulers, enlightened by communication with Europe, will in time discard their savage vices and superstitions, and engraft on the native stock of an imperfect civilization the humanities and perhaps the religion of

* Introduction to the *Journal of the Discovery of the Nile*.

Europe. The novel and surprising articles which have been presented to them have inspired them with an intense desire for trade, and for a regular intercourse with England. It is far from unlikely that, together with the commodities of Uganda and Karagué, we may some day receive a consignment of black princes for the purpose of being instructed in the wisdom of the illustrious visitors, by whose immeasurable superiority their fathers had been so deeply impressed.* The great achievement of Captain Speke and his

companion will thus have accomplished a far more important object than the solution of a geographical problem, however interesting; and whatever may be the scientific results of future explorations in the basin of the Nile, they can not deprive them of the fame of having been the first Europeans to penetrate those mysterious regions, and of having successfully forced their way through savage tribes and the obstructions often opposed to their progress by barbarian kings, with that true British courage and perseverance to which no travelers who have ever faced the perils of African discovery can more justly and honorably lay claim.

* This wish was expressed both by the kings of Uganda and Karagué.

From Chambers's Journal.

ICE - CULTURE .

It is not now, as in the old days, when people gathered ice only as it happened to form on ponds and streams; a lake is treated as a sort of field from which a good crop may be obtained by careful attention; and moreover there is *ice-making*, an actual manufacture, which may be carried on just as well in summer as in winter.

We do not speak here of the *ices* or *ice-creams* of the confectioner, although these are often produced by very beautiful refrigerating processes; we refer to actual blocks and slabs of ice, solid and translucent, susceptible of carriage from place to place, and fitted for use in pieces of very varied size.

The trade of ice-collecting in this country, though comparatively a small affair, is not without its peculiarities. Half-a-dozen men often bring into a joint-stock their capital, consisting in each case of a small cart and a donkey or pony. They make a bargain beforehand, with the owner of some pond or other piece of water, for the ice that may happen to form during the winter. Keenly on the watch for frosty mornings, they rarely miss an opportunity of gathering in a film of ice, thicker or thinner, as the case may be. The first films, small in quantity, are generally taken at once to the shops of fish-

mongers and confectioners, where they find a ready sale; but when the frost intensifies, and the layers become thicker and heavier, the men take the ice to ice-merchants, who are ready to buy it in any quantity, and place it in regularly-constructed ice-wells or ice-houses. From these storehouses it is brought forth at all periods of the year, especially in summer, to lend its cooling and preservative aid to confectioners, fishmongers, poulterers, hotel-keepers, and others. There are ice-merchants at Billingsgate, to supply the salesmen and fishmongers; and at Barking, there are large stores of ice, to fill the ice-wells in which fish are brought from the North Sea by the Barking smacks. The ice-carts above noticed are the humble means of obtaining a large portion of this supply; and any one who will look about him during a hard winter, in the neighborhood of rivers, brooks, ponds, and canals, will be pretty certain to meet with indications of this trade. Of course, the men will not *pay* for the ice if they can avoid it; and it all depends upon the nature of the locality whether they can help themselves gratuitously, or have to pay a small "royalty," as mine-owners would call it, for the privilege. If the gathering can be made before a gleam of winter sun shines

out, so much the better for the dryness and money-value of the ice; hence the men are stirring betimes in the morning, with their donkeys, carts, rakes, shovels, and such warm wrappers as they happen to possess.

There is an Ice-store or *Ice-granary*, as some persons call it, at Chelsea, in which our common pond and river ice is stored in considerable quantity. The owners are quite at the mercy of the weather as concerns a supply; the winter of 1862-3 was a bad one in this respect. When the winter is favorable, many scores of carts may be seen drawn up in procession, waiting to deposit their cargoes of ice. Mr. Charles, the proprietor, built, in 1860, an ice-house superior in many ways to those usually seen in this country. The outer casing of the building is of massive brick-work; within this is another casing, or wall of strong timber; and between the two is a compact stratum of saw-dust, a substance remarkably efficacious in checking the transmission of heat. The inclosed area of the building is divided into four compartments, each capable of containing a thousand tons of ice. The only door, extending from floor to roof, is narrow, and closed by a sliding-shutter, over which, on the outside of the building, is fixed a crane. When the laden carts come into the courtyard, the ice is quickly put into baskets, hauled up, and emptied into one or other of the compartments; here it is strewn about equally, layer after layer, until the whole place is full. Most of the older ice-houses in this country are built underground, on the theory that the atmosphere is colder there than above; but it is now known that the exclusion of damp is a great desideratum, and that this can be better insured above ground than below. The rays of the sun do more good than harm, if the building be well constructed, because they tend to dry the air in and around the building.

Concerning all the smaller modes of obtaining ice, by evaporation, refrigeration, etc., they belong to the scientific processes presently to be noticed; but in reference to naturally-formed ice, gathered only when Jack Frost chooses to make it for us, there is obviously a difficulty to be contended against in mild winters. At such a time our ice-users look about them, to see whether a supply can be profitably obtained from other quarters. Norway, Sweden, and the Baltic provinces, are

colder than England during winter; and advantage has been taken of this fact. A Fleet-street fishmonger is credited with the introduction of Norway ice into England as an article of commerce. About forty years ago—in a season when the supply of ice in England was very small, and the resources of the forthcoming winter of course doubtful—he boldly determined to make a voyage to Norway, and see what could be done there. He purchased a large quantity, chartered a vessel, brought it home, and sold it at a good profit. Encouraged by this first success, he made a second venture; and a regular trade was thenceforward established. On board the vessels that bring the ice from Norway, the hatchways and bulkheads are tightly calked. When deposited in the store-houses in England, the upper surface of the ice is kept covered with thick woollen cloths, which are also used when the ice is conveyed in carts to shops and hotels.

Although Norway ice can be sold in England cheaper than American, it is not so good in quality, and it is not the object of so remarkable a trade. It is to America that we refer when we speak of the *culture* of ice—namely, the careful management of bodies of water for this purpose only, with the view of producing an ice-crop which will pay all expenses and leave a profit.

The first idea of sending ice from North America to hotter countries for practical use seems to have occurred to Mr. Tudor, a Boston merchant. In 1805 he procured a supply of ice from Saugus in Massachusetts, brought it to a shipping port, and sailed with it in a brig of his own to Martinique. He carried on an increasing trade till 1812, when the war with England occasioned an interruption. Recommencing in 1815, he established an ice-trade to Cuba, Savannah, Charleston, and New-Orleans; sometimes losing by the venture, but making a fair profit under average circumstances. At last, in 1833, he made a bold venture—to cross the Atlantic and Indian Ocean, and land a cargo of Massachusetts ice at Calcutta; he sent a hundred and eighty tons, of which sixty melted on the voyage, and twenty more in getting up the Hoogly. The ice was packed in large blocks, closely fitted together between a double-planked casing, filled in with dry tan; but still he had only a hundred tons in salable state when it reached Calcutta.

The ice was at once sold to the natives at a good price; and a trade thereupon commenced which has never since ceased. In 1834, an ice-trade with Brazil commenced; and from that time this very curious kind of commerce extended with wonderful rapidity. In 1836, there were forty-five cargoes of ice shipped from Boston and other North American ports, one hundred and seventy-five in 1846, and three hundred and sixty-three in 1856 (containing a hundred and fifty thousand tons of ice); and since the last-named year the increase has been very rapid. Before the desolating civil war in that country began, the Boston merchants found the ice-trade advantageous, in affording freights to southern ports for some of the ships which were to bring back cotton, sugar, tobacco, and rice; but this exchange of produce has for three years been woefully interrupted.

When Mr. Tudor's enterprise was seen to be successful, several ice companies were formed in the New-England States, one of which (the *Wenham Lake Company*) is familiarly known to us by name. The ice produced in deep ponds in that country is particularly good, hard and compact for keeping, and clear and clean in quality. The small lakes near the Hudson river, the river itself above the reach of the tide, and various streams and ponds over a large area of country, contribute towards the supply. One of the best sources is Rockland Lake, in Orange county, which yields far more than a hundred thousand tons every winter. All the companies adopt a pretty uniform plan in gathering the ice. The water is kept as free from twigs, leaves, etc., as possible, when still in an unfrozen state. When the frost has lasted some time, and the ice is about nine inches thick—or double this amount if intended for exportation—the snow or sleet is swept off, or rather scraped off by a wooden apparatus drawn by a horse. A sort of cutting plow, drawn also by a horse, is then passed over the ice, in such manner as to cut parallel grooves about three inches deep; and another machine, midway in action between a plow and a harrow, drawn over the ice in two rectangular directions, separates it into small squares or cubical masses. As the grooves thus made are only intended to serve as guides for a saw and a wedge, they only extend a few inches in depth. A saw, worked by hand, cuts out one row of blocks; and then the rest are easily sev-

ered by a shovel used in the manner of a wedge. The blocks are either floated through the small channels of exposed water to the shore, where they are hauled up, or they are jerked out with a hook at the end of a pole, up a slide upon a platform placed at the edge of the opening, and moved by means of low sledges to the edge of the pond. The storehouses are always very large buildings, of wood or brick, constructed near the edge of the lake, pond, or stream; as they usually vary from one to two hundred feet in length, with a considerable breadth, and have no windows, they present a singular appearance. Two of these storehouses at Rockland Lake have a capacity for forty thousand tons each, while one at Athens, on the Hudson, will hold sixty thousand tons. In many cases, the blocks are raised by steam-power up an inclined plane to the top of the building, and thence let down another plane to any part within where it is to be packed. Around Fresh Pond, near Cambridge in Massachusetts, there are upwards of fifty of these vast storehouses.

To exclude warmth when the winter relaxes, the hollow walls of the storehouses are filled in with tan, dried leaves, rice hulls, hay, shavings, or saw-dust; and the blocks of ice themselves are packed in similar non-conducting materials. The saw-mills of the neighborhood find a good market for their saw-dust in this way. The blocks are placed upon their edges rather than upon their flat sides, as they are found to keep better in this position. The season of the ice-harvest being short and uncertain, the operations are conducted with great activity at the proper period; numbers of men assemble on the ice with their various machines, and the scene is a very busy one. If there is moonlight and the night be clear, the operations are continued uninterruptedly. One gang or party, working together, will sometimes cut, raise, and deposit in the storehouse six hundred tons in an hour. In the interior towns of America, the ice is sold at two-and-a-half to four dollars (ten to sixteen shillings) per ton; at Boston it is sold wholesale for shipment at about two dollars (eight shillings). Wenham Lake, about eighteen miles from Boston, is very deep, and the ice forms upon it beautifully clear; here the blocks are made to range from one to two hundred weights each. An acre yields a thousand tons of ice of average thickness. We may thus, in speaking of the

ice as a *crop* or *harvest*, say that the crop yields from £400 to £800 per acre. The Wenham Company has a railway of its own to Boston, and the storehouses in that busy city often contain as much as six hundred thousand tons of ice at one time. Even four years ago, it was estimated that ten thousand persons and six million dollars of invested capital were concerned in this remarkable American ice-trade.

There is one aspect of this matter really important—the effect which cheap supplies of ice may possibly have in enabling the white man to live and work in tropical climates. If beverages can be cooled by means of ice; if meat and other articles of food can be preserved in good condition for some time by its agency; if rooms can be cooled by placing vessels of ice in them; if (which is now known to be the case) seawater can be frozen into fresh ice, and this be melted into fresh water—if these things be so, then some, at least, of the miseries that press upon the white man in a hot climate might be alleviated, and we might then really see what northern muscles can effect in southern regions.

Whether *ice-making*, with a lofty disregard of cold, climate, or season, is ever to take the lead of *ice-gathering* as practiced in England, or *ice-culture* as observed in America, remains for the future to show; but the machines invented for this purpose are highly ingenious. Professor Leslie, Dr. Faraday, M. Thilorier, and other philosophers, have shown how easy it is to cool and freeze water by certain processes of evaporation and absorption; but their experiments were made for scientific purposes, not to produce ice commercially. As in other matters, the question of L. s. d. enters here, in its own imperious way. Our lecture-tables have exhibited the marvelous phenomenon of *freezing water in a red-hot crucible*; but such high-style philosophy would be of very little use to our fishmongers and confectioners.

The attention of some millions of persons was attracted, in the International Exhibition of 1862, to two ice-making machines of very remarkable character. It seems wonderful, in a hot building on a July day, to see beautiful slabs and cylinders of ice produced before our eyes, and to test the reality by touch and tasting. One of these machines, known as *Siebe's Ether Ice-machine*, acts in a way that may be briefly described as follows: It

consists essentially of an air-pump, driven by a steam-engine; a refrigerator; and a freezing-vessel. The refrigerator consists of a large number of parallel copper tubes united at the ends, and immersed in an outer vessel; the tubes contain ether, while the vessel contains a saturated solution of common salt or brine. In a wooden cistern are placed several tinned copper rectangular troughs, each eighteen inches long, the same in depth, and two inches wide; they are filled with the water to be frozen, and are immersed in brine. We have thus water, brine, ether, and an air-pump. Ether rises into vapor at a very low temperature. As fast as this vapor is formed in the tubes of the refrigerator, it is pumped out by the air-pump. It takes a good deal of warmth to produce this vaporization; and this warmth can only be obtained by robbery of heat from the brine which surrounds the ether-tubes; the brine becomes intensely cold, but not frozen, for it will retain the liquid state even at thirty degrees below the freezing-point of water. Then, how to freeze the real water in the ice-moulds? The brine is kept in constant agitation by means of machinery, and circulates in a continuous current through the cistern containing the ice-moulds; the water in these moulds is hereby cooled down to a temperature sufficiently low to freeze into ice. By ingenious adaptations of mechanism, the vaporized ether is re-condensed into a liquid, and is used over and over again; the brine, too, though made alternately temperate and cold in the course of its travels, remains the *same* brine during a long continuance of operations. In the best machines of this kind, one pound of coal consumed in the steam-engine produces six or seven pounds of ice. The troughs are lifted out, one by one, as soon as the water in them is frozen; they are dipped nearly to the brim for a minute or two into warm water, by which the copper of the mould is a little expanded, and the ice extricated. In this way were produced the beautiful slabs of ice at the International Exhibition. Sixty-four gallons of ether were employed in making one ton of ice; but this ether was used again and again for weeks, with very little deterioration* or loss. Machines in this form have been made so large as to produce ten tons of ice per day. Mr. Harrison, the original inventor and patentee of the apparatus which has thus been perfected by M. Siebe, has introduced it

into Australia, where, it is said, the ether-made ice is beginning to undersell the ice brought from America. The East India government, and the Peninsular and Oriental Company, use this apparatus.

M. Carré's *Ammonia Ice machine*, also represented at the International Exhibition, works upon the same general principle, but differently applied. Ammonia is used instead of ether. A strong iron vessel filled with a concentrated solution of ammonia is so placed that heat can be applied to it. A smaller iron vessel, containing ammoniacal gas, is so placed that it can be immersed in cold water. When a tube connects the two vessels, and heat is applied, a curious alternation of states may be brought about in the ammonia, first

liquid, then gaseous, then liquid again, and so on; and each process of vaporizing freezes some of the water in which one of the vessels is immersed. The details are a little too complicated to be given here; but it is worthy of note that there is no steam-engine needed — the fuel employed being for heating the vessels and not feeding an engine-boiler. It is said that one pound of coal (or rather charcoal) will produce as much as nineteen pounds of ice by this machine, and three times as much as Sieb's; on the other hand, retort-like explosions have to be guarded against, alike ruinous to apparatus and dangerous to persons. By this machine were produced the beautiful *cylinders* (not slabs) of ice at the International Exhibition.

From the National Review.

P O L A N D A S I T I S . *

[It may be right to say that we give in the following article the exact words of a most intelligent eye-witness of the Polish Revolution.]

THE saying of the Emperor Nicholas, "there is no Poland except among the *émigrés*," may now take place with the similar aphorism of Metternich, that Italy was only a geographical expression. At the very moment when the work of the Holy Alliance seemed to be complete, the accident of a political dinner among a few third-rate politicians in Paris shook it to the ground. The first Italian War, and the reappearance of a Napoleon in France, led up so naturally to Sebastopol and Solferino, that the new order might almost seem to have been inherited. The instinctive hatred which the Tory and Legitimist party every where have felt for the Crimean War, and their unreasoning previsions of evil, have been fully justified by the results on the absolutist system. We are making a new world every where in Europe; or rather, perhaps, we are

stripping off the lath-and-plaster with which certain kingly architects defaced the natural work of time nearly fifty years ago. There has been much bloodshed in the operation, and not a little blundering and intrigue. But the final results at present attained have been Italian liberty, self-emancipation in Russia, a constitution in Austria, and a great expansion of material progress in France and England. Perhaps fifteen years could hardly have been expected to do more.

With the first beginnings of troubles, all eyes were turned upon Russian Poland. To the surprise of all, it remained quiet. There was insurrection in Posen and a war in Hungary, in which Poles did gallant service; but they seemed still to be the true countrymen of Sobieski, doing battle for every banner except their own. The Crimean War came and passed with no armed uprising against the Russian yoke in Warsaw. The campaign of Solferino had almost produced an insurrection in Hungary; but Poland was still apathetic, or at least peaceful. Suddenly,

* *La Pologne Contemporaine.* Par CHARLES DE MAZADE. Paris: Michel Lévy.
Recueil des principaux Traités. Par MARTENS.
 Vols. VIII. and X.

in 1861, the news came, not of insurrection, but of massacre. Europe heard with consternation of an unarmed crowd shot down in a public square without warning, and, as it seemed, with no better motive than the caprice of a subaltern of police. Presently, however, it appeared that a struggle of a kind never yet known had commenced throughout the Polish provinces of Russia. On the one hand, the Russians were striving to provoke a revolt, in order, as Wielopolski once expressed it, that they might bring the abscess to a head. On the other hand, the Poles had resolved to offer themselves to death on every possible occasion, in the belief that the spirit of martyrdom would at length be too strong for despotism itself. The parallel steadily kept in view, and unflinchingly acted up to, was that of the early Christians under the Empire. "The crown of thorns," said a manifesto, "has been our emblem for a century: . . . it means patience in grief, self-sacrifice, deliverance, and pardon." The crown of thorns is never long waited for. Not two months after the first massacre a second crowd assembled near the castle, refused to disperse, and received fifteen volleys with the solidity of veterans. Only prayers and hymns answered the roll of musketry. It might seem that this enthusiasm would be as short-lived as all violent emotions commonly are. But months passed; and the Poles were still readier to offer themselves to death than the Russians to slay. The whole country wore the garb and the aspect of a funeral. Such depth of national sentiment, the growth of long misery, confounded observers in happier distant countries, and was at first mistaken for a mere masquerade. The *Saturday Review*, which is professedly incapable of understanding that there is a noble side to humanity, accused the Poles of acting like petulant children. That fatal contempt for weakness, which clings to Englishmen, added to the general misconception of the drama whose first scenes had been already acted, and the demonstrations were disregarded precisely because the actors were unarmed. At last the fatality of great crimes hurried the Russian government into a new step. It was resolved to draw the new conscription entirely from the towns, with the double view of sparing the peasantry and of thinning the educated class, who are the eternal enemies of misgovernment. The

deed seemed to be done, when some unlucky official conceived the idea of insulting the victims. Europe was told in a telegram that the conscription had been carried out in perfect tranquillity. The jest was one of questionable good taste even for an *employé* of the school of Nicholas, and its results were disastrous. A majority of one in the secret government decided that war at any hazards was preferable to extinction without a sign; and the conscripts not already in custody were instructed to take to the forests, and defend themselves as they could, unarmed in mid-winter, against a disciplined army. "And now," a Polish gentleman lately said to us, "Europe believes that we are alive because we are fighting. Is it not horrible that all our sufferings, all our struggles after constitutional reform, were actually unheeded till we appealed to arms—the last argument of the barbarian?"

Without wishing to defend English apathy on the Polish question, we are constrained to admit that it is not quite inexcusable. The Poles have been too apt to rest their cause primarily on the injustice of the two partitions of Poland, and to date all their demands for redress from 1772. We believe this to be a mistake in principle. The spoilers of Poland were certainly not sovereigns of high character, and they carried out their designs with a mixture of low intrigue, hypocrisy, and brutal violence, which made the injustice additionally revolting. Perhaps the only extenuating circumstance was, that they did not invoke a blessing upon their plunder, like the Congress of Vienna a little later, in the name of the Holy and Indivisible Trinity. But their victim deserved its fate. Since the rescue of Vienna by Sobieski, Poland had governed itself worse than any nation is permitted to do and live. It had the most disorderly form of government, the most intolerant church, and the most degraded peasantry in Europe. Its one redeeming virtue was the courage of its people, and, thanks to its nobles, it had no army. It was a perpetual occasion of war on the confines of countries that might wish to be at peace. To have saved such a nation from its natural fate, foreseen for more than a century, and to have propped up its decrepitude by European guarantees, would have been policy eminently worthy of the cabinet that now keeps the Turks

in Constantinople. But it was not the statesmanship of Chatham or his cotemporaries in England, any more than of Choiseul in France. Sensible men regretted that another bulwark against the Muscovite had been broken down, and that even such a shadow of freedom as the Polish constitution had been was replaced by very actual tyrannies. But it would have been the extreme of political quixotism for England to declare war against Russia and Prussia, its old and late allies, in behalf of a people who scarcely protested by words, and in no wise protested by acts, against the usurpation. At the time of the second partition we were in no condition to interfere, if we had wished it; the war with France absorbed every energy.

The real second life of Poland dates from the second partition. Short-lived as the struggle for liberty was, it had a few glorious memories. A body of insurgents in Warsaw, never stronger than fifteen hundred, by the admissions of the Russian general opposed to them, drove out a garrison of more than ten thousand disciplined troops from the town. Kosciuszko invented the terrible Polish scythemen—imitated, perhaps, from the old flailmen of Ziska, who are still the only known instances of peasants that have been able to cope with regular troops. Crushed by overwhelming forces, and by the ferocious energy of Suvarof, the insurrection now became an emigration, and traversed Europe under the banners of Napoleon. But Napoleon in his heart regarded Polish nationality as a chimera, useful only as a phrase in bulletins and a stalking-horse in diplomacy. He consented at the treaty of Tilsit to dismember the country for the benefit of the man he most hated and despised, the King of Prussia; he declared Lithuania Russian; and in reconstituting a sort of shadowy Poland in the grand duchy of Warsaw he made it the appanage of a petty German prince, the King of Saxony. Nevertheless, under all discouragements, the Polish name made itself so well respected, that the conquerors of Vienna, who punished Saxony and Denmark for adherence to the fortunes of the fallen chief, were well disposed to reconstitute Poland. The time was eminently favorable for reconstruction, and Austria and Prussia would have made sacrifices to keep a few hundred miles of neutral

ground between themselves and their Muscovite ally. To Russia alone Poland was too important to be given up. It was the richest province of the empire, the point of contact with the West, the advance-post upon Europe, and it symbolized Russia's retribution on an old foe. In face of the colossal Russian force occupying the country, and bound as they were by recent obligations to the czar, the allies did not care to enter upon a war for the sake of reconstituting a fallen nationality. But they made it the very first article in the treaty of Vienna, that "the Poles, the respective subjects of Russia, Austria, and Prussia, shall obtain a representation and national institutions;" and, in the peculiar phraseology, "the duchy of Warsaw" "shall be united irrevocably by its constitution" "to the empire of Russia," they implied, as Lord Russell has well observed in his dispatch of August 11, that the constitution was the consideration for which Poland was surrendered. Europe wished to mitigate as much as possible the sacrifices it was obliged to ratify.

But the allies did even more than this. By the fourteenth article they decreed that the regulations for free trade and free use of rivers, canals, and ports throughout the whole extent of ancient Poland—that is to say, the Poland of 1772—which Russia, Austria, and Prussia had agreed to by private treaties, should become of international force, and be maintained inviolably. The intention obviously was to minimize the evils of the partition, and preserve a shadow as it were of the old Poland, which might some day, under favorable chances, become a reality. If therefore the persistence of the Poles in claiming Lithuania and parts of Little Russia is to be treated as irrational, it must be remembered that the chimera has been sanctioned by the public law of Europe, and agreed to by the spoilers. In the same spirit, no doubt, article six decreed the independence of the free town of Cracow under the protection of Russia, Austria, and Prussia. The royal town was left inviolate, as a sort of symbol of the unimpaired right of the nation to exist. Its seizure in 1846 by its protectors was a flagrant violation of the compact; and Prince Metternich's explanation, that the treaty only gave a hypothetical right of inquiry and remonstrance, was enough to sap the foundations of all international

good faith. In saying this, however, we are not caring to waste regret upon the fallen fortunes of Cracow. Its position fitted it for nothing but to be an emporium of smuggling, of secret presses, and of conspiracies; and it fully availed itself of its position. A free town of Cracow between three enslaved provinces was an anomaly; and more tolerant men than Metternich and Nicholas I. might have been tempted to suppress it. Still in 1815 its establishment was one of several articles that all tended to the same end—the ultimate restoration of the old Poland—every one of which has been violated.

Up to a certain point, then, the efforts of the Polish patriots, if not altogether successful, had not been useless. Poland was once more a name in Europe, and a name for which those who bore it need not blush. The next fifteen years were the *Lehr-Jahre* of the people born again. If the constitution given them by Alexander had been loyally carried out, the Poles would have been mad indeed to try the chances of war for the mere phantom of nationality. That memorable instrument must, as Lord Russell has observed, "when once promulgated, be taken to be the constitution meant by the framers of the treaty," and as such, we may add, can not be revoked arbitrarily. It guaranteed freedom of the press, freedom from arrest before conviction, and the secure possession of property, confining the government to natives, and making the ministers responsible to the bicameral parliament. The functions of the czar as king were virtually confined to proposing laws, nominating life-judges and life-senators, and commanding a native army within the country. The whole reads like Utopia or England. The system at first worked so well that opposition was scarcely known in the Chambers; and Alexander declared his intentions of extending representative institutions to Russia. Population and wealth increased as it were by miracle. But the beginnings of evil were soon evident. We do not wish to hold the Poles blameless. These were times of revolution every where, of Carbonari, and Turnvereine, and Luddites. There were men in Poland for whom every thing was insufficient short of national independence. In England such dissentients would have been allowed to talk till they were dumb, or the public tired out. The Russian government at once established a censor-

ship of the press (1819). Opposition transferred itself to the parliament, and the parliament was no longer summoned, or when it met, once in ten years, was packed. Readers of De Custine, who may perhaps be trusted when he reports conversations, will remember how he admires the remark of Nicholas, that all representative monarchy was "the government of falsehood, fraud, corruption." It was so in Poland, because the czar, who never recovered the panic of Pestal's conspiracy, degraded it by intrigues and violence; but after all said he could never fashion it to his pleasure. The case for Poland, however, is best summed up in the manifesto which the Polish committee issued in 1831 (Jan. 10): "The union of the crown of an autocrat and of a constitutional king is one of those political anomalies which can not long exist. Every body foresaw that the kingdom would become the germ of liberal institutions for Russia, or succumb under the iron hand of its despotism. The question was soon decided. Public instruction was corrupted. . . . The people were shut out from all means of obtaining instruction. An entire palatinate was deprived of its representatives in the council. The Chamber lost the power of voting the budget. Monopolies were created calculated to dry up the resources of national wealth. . . . Calumny and espionage had penetrated even into the privacy of families. . . . Personal freedom, which had been solemnly guaranteed, was violated; the prisons were crowded; courts-martial were appointed to decide in civil causes, and imposed infamous punishments on citizens whose only crime was that of having attempted to save from corruption the spirit and character of the nation."

Nevertheless, whatever its excuses may have been, the insurrection of 1831 had the worst of all faults: it was a political blunder. The revolution in Paris had by this time died out, with no better issue than that of replacing M. Sotenville by Jérôme Paturot—the most foolish of sovereigns by the most undignified. Never man was less disposed to risk his family fortunes for any abstract principle of good, or more inclined to pay his debts of honor with frothy phrases, than was Louis Philippe. He had studied the English constitution with no other result than to believe that corruption was the main-spring of representative government. He

cheated in statesmanship from a simple feeling that life was a sharper's game, and that it was due to himself to have the winning hand. In one respect, however, he was beyond his country and his time. The principle of non-intervention, which he first put forward as a European programme, was so little appreciated in 1831 that it only provoked contempt and incredulity. Men persisted in believing that the strong nation ought to protect the weak, and that the interests of Belgium and Poland were those of free countries every where. For a moment it seemed as if the little province of Luxembourg would be the apple of discord between West and East, Russia and the German empire maintaining the principles of the holy alliance against France, and perhaps England. We know now that Louis Philippe would have blustered up to the last moment, and truckled at the last; but it was not so understood then, and the czar prepared for a campaign on the Rhine. The whole forces of the empire were actually in march to the frontier when the insurrection in Warsaw broke out. Well might Marshal Diebitsch say to the Polish deputies that their movement at least had not the merit of being *à propos*. But if the blunder was a great, it was also a splendid one. Never men fought with more reckless heroism than the Poles of that generation. At Grochow less than 50,000 men repelled the main Russian army of 180,000, under Diebitsch. On one occasion 500 Polish gentlemen, in court-dress and armed with small swords, threw themselves in mere wantonness of battle on a detachment of the Russian guards, and were cut to pieces to a man, not unavenged. The population of Warsaw by the time order was restored in it had sunk from 140,000 to 75,000. Had Prussia been neutral, or Poland itself more firmly united, the issue might still have been different; for the Russian army was almost disorganized by the loss of officers, who have always been disproportionately few in its ranks. As it was, fortune remained on the side of great battalions.

The wrongs of the present generation of Poles may be said to date from the surrender of Warsaw. Nicholas told the deputies, in language strangely characteristic of the man, that he would destroy Warsaw at the first symptom of an outbreak; and that it was a real happiness to

belong to Russia. A single incident of the punishment dealt out to the conquered will illustrate the absolutist conception of happiness. The mother of Prince Roman Sanguszko addressed a petition to the czar, imploring mercy for her son, who had been condemned to Siberia. The czar wrote at the bottom of the petition: "He shall go on foot." The leader of the convoy in which the prince actually went, with a sort of grim poetry, led a riderless horse, to the saddle of which a huge knout was attached, and from time to time pointing to it, with the words "The czar's instrument," forced the prisoners to make genuflections before it, as to a cross. Even in Siberia the exiles found that there were distinctions in misery, and that Poles and Russians were on a very different footing. Generally all depended on the character of the governor of the district, from whose caprice no appeal was possible. An exile who spent seventeen years in the country assured the author that six of his companions had been punished with six thousand blows apiece. Horrible to state, one of them survived the infliction for years with a broken spine. Nevertheless the emperor was so well satisfied with the expedient of transportation, that he actually issued an order to transfer five thousand families, by force if necessary, to the crown lands on the frontier of the Caucasus, the latter position being of course exposed to all the horrors of a border war. In the kingdom itself all independence was destroyed. The government recoiled indeed before a total change of the laws, and the Code Napoléon still subsists accordingly. But the troops were incorporated in the Russian army, where there is no distinction of nationality in the regiments, but all are arranged by height. Russian officials were introduced; the Chambers dissolved; the Catholic religion persecuted; the university and upper schools abolished or put under control; and an attempt was even made to force the Russian costume upon the peasantry. But the most effectual engine of despotism undoubtedly was the conscription. Throughout the reign of Nicholas it was maintained at the rate of fifteen in the thousand, ten in the thousand being the highest proportion which statisticians regard as consistent with steady increase. In fact, the population of the country districts remained almost stationary throughout the reign. The

present insurrection would scarcely have been possible if the treaty of Paris had not stipulated that the Russian army should be reduced within limits which practically made it impossible to draft soldiers during the last six years. That breathing-time has given the country a new generation of combatants.

Englishmen are not inclined to extenuate the vices of such government as this. But there is a tendency to look back on the stormy past of Poland—an almost unbroken history, for two centuries before the partition, of wars, or civil feuds, or internal anarchy—and to ask if such a people, however chivalrous and richly endowed, can ever be capable of self-government. There are races which seem fitted only for peculiar phases of civilization, and which die out by some natural process when the appointed term has expired. The Pole, like the Hungarian and the Spaniard, was eminently a warrior; his very tribe-name, Lech, means "soldier." He bivouacked in the broad plains which the Vistula and the Bug water, and held his own manfully, without mountain fastnesses or fortified towns, against all comers. Once, indeed, the Tartar swept over him; but the wave of conquest broke as it passed on, and ebbed back again. Placed between the heathen Prussian, the barbarous Muscovite, and the fanatical Turk, Poland was for ages the border-garrison of Latin civilization. But for more than three centuries a change has been coming upon the world; and the tradesman is supplanting the feudal soldier, buying him out of his estates, multiplying in terrible disproportion around him, and at last beating him in the field by dint of endurance and drill. The Pole did not move with a moving earth. His country, admirable for corn and timber, was comparatively unfitted for commerce, and had never been studded with towns instinct with municipal life. In the absence of a middle class the peasantry will always be unduly depressed; and in the old Polish provinces there was a difference of race between them and their nobility sufficient to widen the gulf between high and low. They were not lower than the Irish peasantry of the last century; perhaps not than the continental peasantry generally, whom the Hohenzollerns kidnapped or an Elector of Hesse sold; but there was less chance that they would ever be elevated. Meanwhile the Pole

was the Frenchman of Eastern Europe—gay-hearted, prodigal, thoughtless, dividing his time between the faro-table and his seraglio. But whereas the French nobility—held in check by the towns, decimated by civil war, and controlled by able sovereigns—had surrendered the essentials of power and clung only to the most meaningless and vexatious privileges, the Polish nobles had seized the opportunity of the dying out of the Jagellons to establish their own power on the ruins of the throne. In 1572 the crown for the first time was thrown open to the world by the fatal advice of a Zamoiski, and the right of election extended to the lesser nobility; that is, from two hundred or three hundred magnates to one hundred thousand gentlemen. From that hour the ruin of Poland was sealed. Under competent kingship it might have done almost any thing in the sixteenth century, at the period of Russia's greatest weakness and of the Thirty Years' War. But with its kings mere titular presidents it lost provinces even under the ablest; under Sigismund III., who burned Moscow, and under John Sobieski, who saved Vienna.

Admitting all this, and without seeking to extenuate the excesses of a rampant liberty, we can hardly regard it as the very worst form of political error. The Polish nobles were perhaps not more factious than the Swedish; the difference was that the former were placed between great powers, whose interest it was to maintain disorder. From the time of Sobieski to the first partition, the country had three sovereigns; the first an Elector of Saxony, nominated by Austria and maintained by Russia; the second his son, nominated by Russia and Austria; and the third an old lover of Catherine II., nominated by a Muscovite army. Great political virtue in all classes of the nation might still have saved the country, or retarded its fall; but the eighteenth century was not the epoch of great political virtues in Europe generally. The Poles fell, as we have said, unjustly, but not undeservedly. The question really is, whether they are to be condemned to all time for having committed a gross political blunder in the sixteenth century, which they clung to as a privilege in the seventeenth, and which they were not allowed to reform in the eighteenth. For the influence of the Saxon court and Russian

arms were steadily employed to maintain the Polish constitution in its most obnoxious form. In 1773 the partitioning powers declared, as fundamental laws which they would not allow to be disputed, that the crown should be elective for ever, and that no son or grandson should succeed his father until after an interval of two reigns; and further, that the republican form of government should be maintained. In 1788-1791, the Polish Diet, notwithstanding, declared the throne hereditary, gave political rights to the middle classes and peasants, and reformed other flagrant abuses of the old system. The reforms were made the excuse of the second partition.

There is a common idea in England that nations are born free, and without special natural endowment can not be made fit for constitutional government. It is the fashion to assume, accordingly, that the past failures of the Poles are decisive against them; that having enjoyed and lost liberty, they are clearly unfit for it. We venture to think that this view is at least overstrained. Even, taking our own country, it may fairly be asked whether an observer in 1689, recalling the history of the past fifty years—the misgovernment of Charles I., the rebellion, Cromwell's military government, the servility of all classes under Charles II., and the open defiance of law by his Catholic brother—might not have pronounced representative institutions an utter failure in England, and only possible in States like Holland or Sweden. But there are even better instances at hand. Down to 1815 Norway was a Danish province, with absolutely no rights; since then it has had the freest government in Europe. Spain failed for forty years, and has yet succeeded within the last ten in making her constitution work. Italy seemed to want almost every element of the system; the people were of the Latin race, unused to self-government, with the aristocracy abased, and the peasantry uneducated; yet the Italian Chambers are not sensibly below the English standard. The fact is, Europe generally has become familiarized with the parliamentary system, and the errors of the first French experimentalists have been fruitful of good to their successors. But, besides this, there is a sensible difference between generations of the same people. The pictures of Vandyke and Reynolds tell their own tale. The

Polish gentleman would be more or less than human, if the events of the last century, the struggles and sufferings of at least three generations, had not left their impress on the national character. A French traveler in the seventeenth century remarked a general carelessness about religion; the *Times* correspondent now speaks of a morbidly religious sentiment. The people was the most outspoken of all; it is now one vast conspiracy under a secret government. Two generations have grown up under the Code Napoléon. But, above all, the position of classes is changed. There is now a large middle class of native tradesmen and artisans; it is, in fact, the only part of the population that tends steadily to increase. The peasants were serfs; they are now not only free, but copyhold proprietors, the only question unadjusted being that of compensation to their landlords. Railroads and steamers are binding the different provinces together. A national literature of singular fertility and depth has grown up. It is, of course, impossible to say beforehand that even these advantages would enable the Poles to govern themselves well; but we may fairly regard them as elements of hope, if a new trial were given. That trial, be it remembered, has never been vouchsafed since the treaty of Vienna, except for a few years under Alexander; and the success then was considerable. Even the secret government may be fairly cited as proof of the people's capacity. In spite of its immense difficulties, it commands the entire confidence of the nation, and beats the Russian police on their own ground. We are constantly told, in "inspired" newspapers, of disunion among the leaders. Differences of opinion there no doubt are and must be, but there are no signs as yet of disunion, or even of such opposition as Fox and his followers maintained throughout our greatest national struggle. Even the class jealousies which have existed in Poland, as every where, and which the Russian government has steadily fostered, appear to melt away before partnership in danger.

Assuming, however, that the Poles have been misgoverned, and that they are capable of self-government, the question still remains whether they were justified in insurrection. We are most of us apt to think that it is better to endure certain grievances than to redress them at the

risk of extinction. Could not the Poles have developed the institutions actually conceded to them by a certain exercise of political tact and long-suffering? And, if so, is Europe to bear the penalty of the impatience that preferred appealing to arms? A glance at the relations of Poland with Russia, and at the history of the last seven years, will answer this question. Poland and Russia represent two opposite civilizations. The central idea of Russian government, from time immemorial, has been the czar-father, the paternal despot; of the Polish, the independence of a large governing class. Distinctions of rank in Russian are bureaucratic, and the pride of family is a modern exotic; in Poland, the feeling of race has often bordered on insanity. Leave a Russian village to itself, and its peasants organize a communistic system; in a Polish settlement the divisions of land are broadly marked and jealously guarded. Traditions and immobility are the principles of the Russian church, and of its most powerful sectaries; it has no political ambition, except so far as its patriarch and priests are the instruments of the czar. In Poland, the adopted land of Socinus, Catholicism has constantly represented, as it does even now, the divorce of Church and State, and has thus been a principle of spiritual liberty. Lastly, Polish civilization has been Latin from the earliest times, and that of Russia has been Byzantine. Each nation, therefore, represents opposite principles of life. The experiment of Russian civilization is one to which every thinking man must heartily wish success, not only for the sixty millions whose happiness is involved in it, but because the very novelty of the conditions under which it has been developed, promises to throw new light on the whole history of man. But the possession of Poland rather hinders than assists the working out of the problem. It produces the worst antagonism of all, the bitterness of the conqueror towards the conquered; and Russia, having reached a point where contact with the West has become necessary, is in danger of isolating herself from the sympathies and influences of all Europe. Political liberty and freedom of thought will be for ever proscribed in St. Petersburg, if they are put down at Warsaw.

We dwell upon this antagonism of character between the two nations be-

cause we believe it explains in great measure why they have never been able to assimilate. The idea at St. Petersburg has been that a propaganda of Pan Slavism would finally remove all difficulties. There have been moments when it had some chance of success. In 1846, when Austria encouraged the *Jacquerie* of the Gallician peasants against their landlords, Wielopolski called upon all his countrymen to sink their nationality in the Russian, that they might be revenged on their German enemies, and a deputation waited upon the czar offering to put Galicia into his hands; receiving the characteristic answer, that if he wished for the province he would conquer it, but would never take it as the gift of revolted subjects. At the accession of Alexander II., when milder measures were promulgated, the exiles released, and a certain liberty allowed, the comparison of Russia to Austria, not yet chastened by Solferino, was more than ever favorable to the former. Men hoped every thing from a young prince. But Alexander II., himself a partisan of new ideas, was under the influence of men of the old order. Poland, to the generation of Russians that has grown up under Nicholas, is a conquered province that must be absorbed. These men know nothing, think nothing, of the treaty of Vienna, and of international obligations. They imagine that the war of 1831 has annulled all; as if a revolt provoked by misgovernment could cancel Russia's obligations to France, England, and Germany. Alexander II., reluctantly, it is said, but resolutely, made himself the mouthpiece of the old Muscovite party. Addressing a people who had thronged to do honor to him, he told them: "I mean the order established by my father to be maintained. Therefore, gentlemen, and before all, no dreams, no illusions. The happiness of Poland depends on its entire fusion with the other peoples of my empire. What my father has done, therefore, was well done, and I will maintain it. My reign shall be the continuation of his. . . Have you understood me? I love better to reward than to punish; but know, and take it as my word, gentlemen, that if need be, I shall know how to repress and to punish, and it shall be seen that I will punish severely." This speech, to say the least, was ungracious and unkingly from a sovereign to the subjects whom he saw for the first

time. But words, after all, are words. It remains to be seen by what acts that declaration was commented on and explained.

The leading man among Poles for the last thirty years, and therefore a fair type of the national aspirations and character, on one side at least, has been the Count André Zamoiski. He belongs to a family which is professedly *Anglomane*, and several of whose members have been educated in England, while some of them are said to speak English better than their native tongue. Certainly no man could better represent than Count André the English horror of war, or our belief in material progress and in all gradual processes of constitutional growth. In Count Cavour, also a student of English institutions, the acquired culture was only subservient to a passionate Machiavellic Italian temperament, that would have wrapped Europe in flames at any moment to save a single province of Italy. But to Count André Zamoiski's temperament peace was necessary, as the condition of self-culture and self-government. His great works have been industrial enterprises: stud-stables, a line of steamers on the Vistula, a society for lending money on mortgage, and the famous Agricultural Society for improving the staple of Polish industry. In England such a man, however respected and respectable, would have no great political influence. In Poland he was regarded by his countrymen as the leader of the patriotic party, and by the Russians as a conspirator; the more dangerous because acting with steady legality. In fact, the Agricultural Society served first as a small bond of union between Polish gentlemen in distant counties, then as an excuse for meetings in which social questions, such as serf-emancipation, were discussed privately, within the limits of the existing laws. That a portion of its members would have liked to go further, and give the society a distinctly political character, is no doubt true; but their president never permitted this deviation from their statutes. At last, after the massacre of February, Prince Gortschakoff, trembling for the safety of the town, invited Count André to provide for public security. The result was, that during a week of unparalleled ferment, with a crowd of one hundred thousand spectators invited to assist in the funeral of the victims, perfect order

was maintained. The success was a fatal one. "All the town obeys you," said Prince Gortschakoff, indignantly. "Things can not remain in this state; I do not fear you; I have troops now." Five weeks later the Agricultural Society was dissolved. Its dissolution occasioned the second massacre, the crime of the victims being that they petitioned for its reëstablishment. Then power passed definitely into the hands of the Marquis Wielopolski; and in August, 1862, Count André, having committed the crime of encouraging some hundred gentlemen to sign a petition to the czar for national institutions and official union with the old provinces of Poland, was insulted by the Grand Duke, sent to St. Petersburg, and dismissed into honorable exile.

Those who care to follow out at length the complications of 1861-62, must seek them in the excellent *résumé* of M. de Mazade, from which we have drawn freely. It is perhaps a misfortune that the book is made up of articles which have not been recast, so that the whole has a rather fragmentary character; but this fault of composition is abundantly redeemed by the author's thorough knowledge of his subject, and by his candor and breadth of view. Our own object is simply to point out, that ever since April, 1861, Alexander II. has been carrying out his programme to govern Poland as his father did, and that the second tyranny has been even worse than the first. Except that the commissioners of roads are now to be elected by districts instead of by provinces, a change of very doubtful value, no single organic reform has been promulgated. On the other hand, schools have been shut up by hundreds, industrial enterprise has been discouraged, the clergy have been threatened, leading nobles and authors imprisoned or transported as a precautionary measure; and finally, a conscription organized with the express object of forcing the men most averse to service into the ranks. Since the revolt provoked by these measures, the government has set no limits to its severity. Twenty-three thousand men have been imprisoned as a precautionary measure. Hundreds are sent every week to Siberia. Torture and flogging are now among the means employed to extract confessions. The country is filled with spies. In Lithuania the infamous Mouravieff has offered rewards of from three to five roubles (from

nine shillings to fifteen shillings) for the head of every insurgent. He has levied a fluctuating property-tax of at least ten per cent., or two years' income; and the goods of those who can not at once discharge this monstrous imposition are put up to public auction at nominal prices. We have before us the list of three hundred and ninety-seven persons whose estates, down to the fourth of July last, he had sequestered. He causes every village in which insurgents have been harbored to be burned down.

For these and other such atrocities he enjoys the unbounded admiration of his countrymen, demoralized by the war, and has received the Order of St. Andrew and a letter of thanks from his sovereign. Unhappily he has imitators among the Russian generals; and Annenkoff in Podolia, Kieff, and Volhynia, is said to be not inferior. But even when the Russian generals are humane, well-meaning men, they can not control the troops under them, embittered by a guerrilla war and constantly drunk. Burning alive, burying alive, flogging, are among the horrors of the present campaign that relieve the ordinary incidents of violation and massacre. At first the Russian organs attempted to represent the revolt as excited by the emigrants, and exclusively carried on by the upper classes. Both statements have been emphatically disproved. Not only are the emigrants not in the national government, but the services of such a man as Mieroslawski have been steadily declined, for fear his reputation as a Red Republican should excite distrust in Europe. As regards the different classes of the nation, the list of official victims alone proves that all are represented, about half hitherto having been peasants, farmers, or artisans, though of course the higher heads are the first struck. But the strongest testimony has been that of the Russian general Boggawout, who excuses the disorders of his troops on the ground that the peasants burn the villages at their approach, and fly into the woods to join the insurgents. We will just add, that in two corps we ourselves saw in Poland above a third were peasants, and only a small proportion educated men. But the lower classes in towns, especially Warsaw, have no doubt furnished the chief number of combatants.

Is compromise possible? The czar has in fact answered that question by re-

jecting all mediation, accepting solemnly the responsibility of his acts, and refusing to treat the insurgents as belligerents. After seven months' struggle, with from twenty thousand to thirty thousand men in the field against him and baffling his best troops, Alexander II. allows no exchange of prisoners, and shoots or even hangs as traitors the unhappy gentlemen who have formerly served against their will in the Russian army. Sierakofsky, who was dragged from the bed on which he lay wounded to the gallows, had made himself honorably famous through the length and breadth of the empire by procuring the abolition of corporal punishment in the army. To ask the Poles to lay down their arms after the bitterness of such a struggle, in blind reliance on the mercy of a prince who permits these atrocities, would surely be to expect too much of human nature. Would any sane man like to pledge himself that the czar-father would not respond to their confidence by sending them Mouravieff? But if Alexander II. were not the weak man he is—*qui a des vellités mais qui n'a pas de volonté*—and who is swayed by every impulse of popular animosity or rancor, a capitulation of the weak, considered as revolted subjects, to the strong, being a foreign despot, is hardly a measure to be taken while there are yet a hundred men with arms in their hands. What the czar really counts on is the coming winter. His troops have been repeatedly beaten, and barely keep the field in spite of numbers and superior equipment. His treasury is bankrupt, and heavy arrears of pension and pay are even now said to be due. But he believes that four months' frost will save Russia again, as in the campaign against Napoleon. Having amused and baffled the Western powers by a half-evasive, half-insolent diplomacy, he now looks forward in confidence to extirpating their *protégé* during the winter. The weak will have learned a new lesson on the value of moral sympathies.

It is not for us or for any one to predict the future. Considering the national jealousy of France, the dislike to commence a war of which the issue can not be foreseen, and the weakness of the present ministry, who dare not have a decisive policy for good or evil, the chances are certainly considerable that England will remain at peace during the next six months, and that Austria will follow her

example. We need not discuss the possibilities which are still talked of in Vienna of an Austrian army of occupation taking possession of Poland up to the gates of Warsaw. But there is more than one step short of war which would seriously derange the Russian combinations. The recall of the English, French, and Austrian ambassadors, in imitation of what was done in Naples in 1859, would be something more than a mere moral remonstrance. It would shake the prestige of the war-party; it would necessitate fresh armaments on the Baltic, and ruinous expenses throughout the empire. Another and even simpler step would be to acknowledge the Poles as a belligerent power. The *Presse* of Vienna—the Austrian *Times*—has already declared in favor of this step, and it is generally believed that Franz Joseph and his ministers only wait the signal from St. James's, and the assurance that they will not move alone. There are several precedents for this measure. In the Conference held at London in July, 1826, between the cabinets of London, Paris, and St. Petersburg, it was postulated "that an intervention is justifiable not only when the safety and essential interests of a State are affected by the internal events taking place in a neighboring State, but also when the rights of humanity are violated by the excesses of a cruel and barbarous government." The Porte refusing to grant an amnesty, the three powers at once recognized the belligerent rights of the Greeks. Similarly the belligerent rights of Belgium were recognized; and in this case England was not eventually drawn into any war with Holland. The insurrection of the Spanish colonies was recognized by England, the United States, and Sweden. We recognized the belligerent rights of the Southern secessionists without even sufficient delay to show that they could hold their own against the government of Washington. Here then appears to be a distinct principle, that it is in the option of any power to recognize insurgents of any kind and at any time during the struggle, as belligerents.

What, it may be said, would be gained by this? The immediate and immense gain would be the winter. During those very months when the Russians expect to draw their enemy, as in a net, the Polish combatants would emigrate into Austria, leaving perhaps a few of the best-seasoned

bands to harass the enemy. The insurrection would become something impalpable and yet terribly near. It would buy its munitions of war at a fourth of their present price, and would recruit soldiers from every country in Europe. The men who are now imprisoned on suspicion by the Austrian police, and sent back over the frontier, would be allowed to traverse Galicia at will, so long as they did not do it in regular companies. It is not too much to say that the whole labor of subjugation would have to be recommenced. Yet, in one particular, at least, the war would have a tendency to be less bloody. It would be difficult for the czar's government to persist in treating as brigands men whom the rest of Europe recognized as regular belligerents. We might fairly hope to hear of flags of truce between the two combatants, and of mercy to the wounded.

It rests with Russia to prevent this recognition, and to reconcile herself with civilized Europe. She is still in a position, if she will only use it, to yield with dignity. The reconstruction of Congress Poland with a native parliament, under a Russian grand duke, and with international guarantees for the honest carrying out of the amnesty that has been so often talked about, would be nothing more than the court of Peterhof is already pledged to by the treaty of Vienna, and yet would suffice to satisfy public opinion. France and England have nothing to gain by the continuance of an internecine struggle, which occupies their diplomacy, produces constant fluctuations in the money market, and keeps cabinets and press in a wearisome state of tension. The fee-simple of Poland would not pay us for the disquietude of a year's European war. That the Poles would dislike such an accommodation as we have suggested is more than probable; but there is just sufficient equity about it to make it certain that they would forfeit the sympathies on which they now rely if they refused to entertain it. Besides, their faith in cabinets must by this time have undergone several disenchantments. As the scheme is in fact that which the Russian organs steadily represent as already contemplated, the only humiliation for the emperor would be in admitting European intervention in the case of a province which he only holds in trust for Europe. The revolt of 1831 no more transferred Poland

to the Russian empire than the revolt of 1848 in the Ionian Islands changed them from a trust into a dependency of the British empire. Sooner or later the czar's government will discover that it is not

wise to disregard public opinion and European treaties; and it may have occasion to learn before many months are over that there are other means of punishing bad faith than by drawing the sword.

From the Leisure Hour.

A NIGHT ADVENTURE AT SEA.

A short time since, I happened to be in Valparaiso, where I made the acquaintance of an American, one of the officers of the United States whaling-ship Nantucket, which had run in from her fishing grounds in the Pacific, to obtain a supply of water and fresh provisions; and one day, in talking over the different events of the cruise, which had lasted two years, he narrated the following curious incident which had befallen them.

One morning at daybreak, when lying becalmed, they found themselves in the midst of a shoal of sperm whales, and all four of their boats were speedily lowered and chase given. Two of them proved successful, and by the afternoon, had returned to the ship, towing their captured prey; but the others were not so fortunate. Having by some blunder missed their first chance, it was not until after an arduous chase of many hours that their leading boat at last succeeded in overtaking and making fast to the whale. A long and desperate struggle ensued, the second crew quickly coming to the assistance of the first; but line after line from both was expended by the animal, which proved to be of the largest size, and of immense strength and tenacity of life. It tried every means to escape; sometimes "sounding," that is, descending perpendicularly to a vast depth into the recesses of the ocean, until the enormous pressure of the superincumbent water was more than even its huge strength could bear, and it was forced to return to the surface, along which it would then rush with such velocity, dragging both boats after it, that the water, divided by the sharp bows, curled high in two solid walls on either hand. At length, however, its speed began to slacken, and the

whalemen, anxious to secure their prize before darkness set in, advanced to finish him, and four more lances were rapidly hurled into the body of the monster, which, apparently exhausted by its preceding efforts, lay passive on the water. No sooner, however, had the last steel penetrated, than, as if the stimulus had roused anew all its vital energies, it hurled itself half out of the water, and swinging its ponderous flukes high up in the air, struck two tremendous blows in quick succession, one of which fell upon the foremost boat, cutting it completely in two, and scattering its occupants (one of whom had his thigh broken) in all directions. After doing this mischief, it again sounded; and, hastily picking up their companions, and placing the wounded man in the bottom of the boat, the rest, undaunted, impatiently awaited the coming up of the animal to breathe. But they waited in vain; their prey had escaped them. In his last desperate effort to free himself, he had (so I was told, at least) dived so deeply, that, with his strength exhausted, he was unable again to rise, and dying below, sank still deeper. The disappointed whalers sat in silence, watching their lines disappearing fathom after fathom, until their last yard was gone, when the bowman, who held his tomahawk uplifted ready to strike, was compelled to let it fall and sever the rope, lest the weight of the descending body should drag the boats down with it into the abyss.

Wearied with their long day of fruitless toil, and depressed at their ill-fortune, the men prepared to return to their ship, which had long before sunk beneath the horizon; for, being calm, she could not make sail to follow them. After pulling

for some hours, however, they felt a slight breeze spring up, which they knew would bring her down; and, after awhile, a rocket ascending showed her position; and this signal was repeated every half hour, until the vessel was within a few miles. They had been resting on their oars for some time, but had once more resumed them upon noticing that the breeze was dying away, and their ship likely to be again becalmed, when all at once a sound struck upon their ears, which made each man pause in astonishment. It was a groan, or rather a hoarse, heavy, smothered kind of moan, which seemed to be borne to them from across the waters; but whether from near at hand, or far away they could not tell.

The men stood up in their boat and listened. The night was cloudy and dark; but the line between sea and sky was sufficiently distinct to show to their practiced vision the form of their own vessel, which was only three miles away; but no sail was visible on that part of the horizon from whence the sounds appeared to come. Thinking it possible, however, that some shipwrecked boat's crew might be in their neighborhood, they joined together in a shout; but there was no response audible. All at once, however, some flashes of light gleamed across the distant darkness, and a bluish glare shone out for a minute or two, flickered, and disappeared. At the same moment, a distant piercing cry, followed by moanings similar to the first they had heard, rose on the night air. In all their experience, whether on sea or land, they had never heard sounds like them, and, amazed and startled, and with all the superstitious fears excited to which sailors are prone, the men in the boat whispered their conjectures to each other.

"There's nothing as I know of that swims the sea or flies in the air, could make those sounds," said one. "If there was any craft any where within miles, we could see her sails plain enough; we are too far out at sea for any coasters carrying cattle. Besides, there's no such trade on this coast, and we're eight hundred miles from it."

"If it's from a boat, what kind of a crew must she have? That's what I want to know," said a second. "I know what it is to be adrift and perishing. I was one time on a raft with twenty more, for two-and-thirty days, and a whole lot of 'em went mad and died raging, from

drinking the salt water, and yelled and fought, and throttled each other till they were pitched overboard; but then, these here sounds aren't human like."

"Couldn't be a whale, Bill, that made that moanin' noise?" asked another of the boat-steerers, who was a veteran salt, having followed his calling as a sealer and whaler in all parts of the world.

"Well, it might be—that noise might; though twarn't exactly like it neither. I've heard 'em too often not to know 'em. Sperm whale don't roar much; but right black, or Greenland species, common all over the world, you can hear, at times, miles away. I remember once, when I was in New Zealand—we was a Bay whaling near Hokianga—we killed a cow whale and her calf, and towed 'em into the bay. Well, the old bull, he came in from sea at night-fall, and kep' up such a moanin' and roarin' it was pitiful to hear him. He knowed his missus had gone in there, you see, and he was a callin' on her to come out; and for nigh-hand on to a week, every night, he'd tack about in the offing, until daylight, waitin' and callin' her. Twarn't till we stripped the blubber off her, and towed the carcass out to sea, that he gave in and left."

For some time the men listened; but nothing further was heard or seen. They also rowed for some distance in the direction of the sounds, and again shouted, but got no reply; and an hour afterwards they were picked up and taken on board. The captain, when he heard their story, swept the horizon with his night glass; but detecting no sail, he concluded that the vessel from which the light had proceeded (if they really had seen it) had passed out of sight in the interval; and as for the sounds which had startled them, he made light of them.

"You heard a grampus grunting, or some seals snorting, or, maybe, some pen-guins trumpeting," he said. "You were all knocked up and half asleep. Turn in, the whole lot of you, and take a snooze till daylight, for we must finish stripping and trying out this fish. A set of lubbers you were, to lose that other whale!"

The men did as they were ordered, but were perfectly convinced that the sounds they had heard were not caused by any such agencies as their commander had mentioned. The light, strange as it was, certainly might have proceeded from a passing ship, although, in that case, it

was odd they could not see it. Each of the noises separately also might be thus accounted for, perhaps; but the whole occurring together, and proceeding from one quarter, was to them inexplicable.

They had been asleep some hours, and day was about to break. The breeze had slightly freshened; but the ship, after having picked up the boats, had been hove to, and consequently had remained nearly stationary during the night, the carcass of the whale having been placed alongside, secured by tackles, preparatory to stripping the blubber, or "blanket-piece," as it is technically called. Some of this had already been taken off, hoisted on deck, cut up, and placed in the huge coppers, used in the sperm whale fishery for boiling (or "trying out," as it is termed) the oil—these coppers being imbedded in brickwork, on the upper or open deck. The fires beneath them being laid ready for lighting, the mate was busy with his preparations when the captain, who had been in bed, turned out and came on deck.

"Do you know," said he, "that I really think that there was no mistake in what the hands said? There's something out of the way going on, or afloat near us. My cabin window was open—the head of my bunk is close to it—and as I lay there I heard something—I can't make out what? Did you not hear any thing?"

"No; we've been busy knocking about the decks. What was it like?"

"Well, at first it was like what the men said—deep groaning, moaning, and rumbling kind of noises, a good distance off apparently. Then I heard a scream; then some one laughing—a rum sort of laugh it was too. I should have thought myself dreaming, only for what the men had said."

"How long since was this?" asked the mate.

"Within this last quarter of an hour. But is every thing ready for trying out, Mr. Smart?" And the captain examined the preparations made. "Call the watch as soon as it is light enough, and set all hands to work. The coppers are charged, so you may as well light the fires, and then pass the word along for silence fore and aft. I want to listen, and try and make out what those noises mean."

He went and stood by the taffrail, while the men on deck, ceasing their work, went to the side, or mounted the rigging.

For a short time they remained thus, looking and listening, when the captain, hearing again the deep moaning he had described, raised the speaking trumpet he held, and hailed. As the hoarse sound died away, a startling reply was given. A burst of strange, harsh laughter came ringing across the water, gradually changing into a wild cry, which rose upon the night air, sounding inexpressibly sad and mournful. At that moment, as the seamen, thrilled and awe-struck, listened, the fires which had been lit beneath the coppers, and which had been fed with pieces of refuse blubber, began to burn up brightly, the flames presently shooting up half way to the tops, and casting a broad red glare over the surrounding waters. And, as if this flame had been a spell to conjure up the demons of the deep, from the thick darkness beyond the verge of the circle of light issued a succession of sounds of the most extraordinary character. Yells and howls, shrill screams and roars—now mingled, now separate—at times dying away, and again, as the flames shot up fiercely, rising in hideous chorus—assailed the ears of the astounded whalers, while at intervals, mingled with the uproar, was what seemed to some on board to be the sound, indistinctly heard, of human voices. This continued until the vessel had passed on her way some distance, when the noises became more and more faint and finally died away.

Before the fires had been lit the ship had been put before the wind, in order that the smoke and flame might pass forward and not endanger the rigging or incommode the men at their labor. Some of the latter, alarmed at the sounds, would willingly have had her continue her course and leave the vicinity; but the Yankee skipper was not so superstitious; and, being determined to ascertain their cause, he ordered the fires to be put out, (so that the vessel might sail against the wind,) and returned. While the look-outs aloft were trying to catch sight of any vessel or other object in the neighborhood, the sounds again reached them; and, steering in their direction, the ship was hove to and a boat lowered; but the men hung back when the captain ordered a crew in, and wished to wait for daylight.

"Why, what are you afraid of, men? Do you think there are evil spirits cruising?"

He paused in surprise, and all hands

uttered a cry. A strange phenomenon was presented to their view: a pale-blue phosphorescent light suddenly gleamed out of the darkness, and showed them a wreck, dismasted and drifting. Through the open ports and breaches in the bulwarks, broken by the waves, the unearthly-looking radiance shone, glimmering and flickering on the stump of the mainmast, the only fragment of a spar left standing. Its bows were towards them, and from their own mastheads they could at times, when it pitched and rolled, see down on to its deck. Close to the after hatchway burned a blue tremulous flame, sometimes shooting up vividly, at others sinking until nearly extinguished, by the light of which all on deck was rendered visible. All hands looked eagerly for signs of a crew; but nothing in the shape of a man was to be seen. The deck was cleared, the long-boat and spars gone; there was nothing to conceal them from view, had any men been on board.

But although nothing in the guise of mortal man was visible, other objects presented themselves to the view of the awe-struck sailors. Gaunt and weird-looking shapes of hideous animals were plainly seen flitting restlessly to and fro in the ghastly light of that unnatural illumination, of a lonely wreck at sea.

"I can tell you, sir," said my informant, at this portion of his narrative, "that I for one was scared, and no mistake about it. I was brought up on a part of New-England where a belief in the supernatural prevails. I had heard that evil spirits appeared at times in the form of beasts, and haunted the places where they had when on earth committed their crimes; and we were off that coast where, for two hundred years, the desperadoes of every clime—pirates and buccaneers—had pursued, when in life, their horrid calling. As the blue light flickered, and the yells once more broke out, these tales of my early days might have made me fancy myself in the presence of some phantom ship with its ghastly crew.

"But daylight soon came, the blue light went out, and we then saw that the wreck was a real one, and that a boat was towing astern; and when we pulled to it and hailed, voices from the cabin aft, replied, and we rowed round and saw a man

with his head and shoulders projecting out of the window.

"I say, strangers!" he shouted, 'don't none of you offer to come aboard. Some of the critturs got loose last night, and they're dangerous.' And dangerous enough they appeared to be, for at that moment came to the taffrail, and looked down on us, several hyenas, whose eyes, sparkling with famine, glared most ferociously; and no wonder: they had had no food for nearly a week.

"The brig was in fact a complete menagerie, which a speculative American was taking to California, visiting all the South American ports on his way. He had been blown out to sea by a hurricane, which at last carried away his masts, and he had been drifting about ever since, till his beasts were nearly starved. He had a miserable crew, half of them being his showmen, and he himself was his own captain, trusting to his mate to navigate for him. They had prepared the long-boat for leaving, should no vessel fall in with them, but had made repeated abortive efforts to rig jury-masts as well. In their last attempt the spar had fallen, and the heel of it smashed the cage containing the hyenas, and all hands had to make a speedy retreat to the after cabin, and keep below till daylight should enable them to shoot, or otherwise secure them. Our fire, by exciting the beasts, attracted their notice, and at first they thought it was a burning ship. The light seen by the boat early in the night, was made by burning some spirits of wine out of the cabin window, and they now prepared to repeat the signal, hoping to attract our attention; but this time, instead of hanging it out of the cabin window, they managed to open the hatchway and push it out on the deck, where the beasts were prowling about, restless with the hunger which tormented them.

"The crew stayed three days with us; we rigged them up jury-masts, and, what was of greater consequence, supplied the captain with plenty of the beef from the whale for his animals, and thus saved him from ruin; for the poor man had invested all he had in the menagerie. We heard afterward that he got safe to Callao, and I suppose is in California long before this."

From Chambers's Journal.

THE MONTH: SCIENCE AND ARTS.

THE lecture with which Mr. W. R. Grove opened the session of the Royal Institution was alike worthy of the place and the lecturer. Mr. Grove is so practiced a speaker, so fluent, so clear in his definitions, so fertile in illustration, and so suggestive of philosophical views, that to hear him deliver a lecture is a rare intellectual treat. In the title of the lecture, "Boiling Water," there did not appear to be much promise of interest; but Mr. Grove showed that in its bearings on chemical and mechanical science, and its relations to cosmical science, it is a subject which, in proper hands, would, perhaps more than any other, yield results of the highest importance. He astonished his audience at the outset by telling them that there never had been such a thing as boiling water, and never would be; and he showed reflected on a screen by the electric light, that what is called boiling, is, in fact, the driving out of air from the water by the application of heat. Expel all the air from water, and it will no longer boil in the ordinary sense; and if it were possible to operate on water not contained in a vessel, it might be heated to an intense temperature—more than three hundred degrees—without altering its form. And we are not to forget that the hard nature of the vessel in which water is boiled may have as much to do with the boiling as the other elements in the operation. Then comes the question of constituent gases, and that apparently indestructible bubble of gas, "that everlasting bubble," as Mr. Grove calls it, which remains at the bottom of every experiment, whatever be the liquid operated on. Perhaps among our chemists there may be one who will take up the subject of boiling water as a special research. Wide as the use of steam is at the present day, he could hardly fail to make some discovery which engine-builders would turn to use and profit. We should rejoice, in common with many others, were Mr. Grove himself to undertake the inquiry; but unfortunately for

science, he is a Q. C., and wholly taken up with law.

Astronomers have been kept on the alert by the appearance of a comet, which may be one that has a period of fifty-three years, and was last seen in 1810, or may be a stranger. It was nearest to the sun—18,000,000 miles—at the beginning of the present month. At the Astronomical Society, the sun itself has been a subject of discussion: the best observers can not agree as to the so-called "willow leaves," or peculiar appearances visible on the solar photosphere. Some there are who think that those appearances denote some kind of organism, that is, a form of life, which opens a new, or at least revives a very old doctrine as to the vital functions of the sun. In another branch of solar science, a valuable contribution has been made by Mr. R. C. Carrington, who has just published a large quarto book, *Observations on the Spots on the Sun*, from 1853 to 1861, illustrated by 166 plates. In the plates, the spots are carefully figured as they appeared during the eight years of observation, and their arrangement is such that any competent mind may use them in tracing out and studying the periodical times of solar spots. Mr. Carrington expresses an opinion that there is some connection between the attraction of Jupiter and the greater or lesser occurrence of spots on the sun.

Again, the Registrar-general's returns show that a falling thermometer indicates a rising death-rate. In the metropolitan districts, during the second week of January, 2427 persons died, being 877 more than the average. Strong argument this in favor of warmth; but let those who study the question remember that the summer of last year, though warm enough to produce an abounding harvest, was not particularly favorable to health. A French M.D. has read a paper before the Medical Society at Paris, in which he endeavors to prove that a certain class of diseases may be prevented or cured by an increase of atmospheric pressure. Pa-

tients afflicted with asthma and other affections of the respiratory organs, are to be shut into a small close chamber, to which a gauge and safety-valve are fitted, and air is then to be driven in by a force-pump to any required pressure up to two and a half atmospheres. By this means, there is, of course, a larger quantity of oxygen breathed by the patient, and this is the active remedial agent. We are not informed whether this method has yet been tried in a number of cases; and without a large number of results, no fair conclusion can be drawn. But to some extent experience may be cited in its favor; for it has long been known that asthmatic miners prefer to work in the coal-mine at Monk-Wearmouth, the deepest in England, because the air at the bottom containing a larger amount of oxygen, in consequence of its greater density, enables them to breathe freely.—For patients who require an African climate during the winter, there is good news from Egypt. Steamers that accommodate fifty passengers now start from Cairo for a month's trip up the Nile. The cabins are described as airy, and the dining-room is on deck, an arrangement which those who have dined on the deck of a Rhine steamer will know how to appreciate. The charge for first-class passengers is about one pound a day. If for this sum cleanliness can be secured, and freedom from the insect tribes which infest the sailing-boats, a trip up the Nile will be rendered more enjoyable for invalids than ever before.—There is good news also for travelers who may have to touch or tarry at Suez; the canal cut by the French Company now delivers the fresh water of the Nile to that scorched and sweltering port. If there be a place in the world that needs a constant supply, it is that.

In some of the French journals, there are accounts of a new kind of paper made of wood. But if wooden paper be new in France, it is not new here or in the United States, for in both countries specimens of paper have been exhibited manufactured from wood. When the manufacture succeeds, we shall hear more about it.—We are glad to notice that Ireland is taking steps for a further development of its resources in the article of flax. So much has been written and printed on that subject, that there is nothing new to be said upon it; but there is a great deal to be done. And if the promoters, who

have recently held a meeting at Limerick, will make use of the experience already acquired, they will derive a profit from many at present useless acres. As an example of the value of the article, we find in a trade report that, in the week ending January 9th, the sale of flax in Belfast amounted to 1080 tons, worth £75,000.—Another gratifying subject is, that from most parts of the kingdom we hear that salmon-breeders have taken pains to obtain ova, and thereby stock the rivers with fish. It will be interesting to observe whether the great plenty of salmon and other fish, which is said to have prevailed in our streams in former times, can be restored amid our present overcrowding and civilization.

The great railway bridge at Charing Cross is scarcely opened, when we are told that the railway bridge at Blackfriars, which seems little more than begun, is to be ready for the passage of trains by next June. Even in these days of engineering surprises, the rapid construction of this bridge is something to wonder at.—Then turning to Kensington, where the International building is disappearing, we hear talk of new museums to be built in its place; and again, the question is revived as to whether the natural history collections shall be removed from the British Museum. Another question, that of the National Gallery, is to be settled, if the House of Commons will give consent, by the erection of a handsome building fit for the purpose on the large plot of ground at the rear of Burlington House.

The much-talked-of three hundredth anniversary of Shakspeare's birthday is approaching, but the question as to how it shall be celebrated is not yet settled. Why should not every town or village that sympathizes with the motive hold a celebration in its own way? Why should there be uniformity in the homage to be rendered to him who is so often described as a many-sided poet? Some people will think the best way of doing honor to the occasion will be to buy a copy of Shakspeare's works.—A new review has been started for the special purpose of presenting a record of the progress of science. Judging from the first number, *The Quarterly Journal of Science* will keep its readers well informed of what *savans* and philosophers are doing in all parts of the world, and of the proceedings of sci-

tific societies in Great Britain.—The Geographical Society have received news of a vague rumor which had reached the Cape of the death of Dr. Livingstone. He is said to have been murdered by the natives. We trust that this painful rumor may not be confirmed, and that the earnest-minded traveler, whose recall has been announced, will once more appear among his friends in England.—Letters from Dr. Baikie announce that he has made further additions to the geography of the countries far up the Niger, has discovered some traces of Dr. Vogel, and obtained the papers of Corporal Maguire, which are described as of importance to geographers. Writing last from Kano, the doctor says: "I every day enjoy nothing less than bread-and-butter for breakfast, wheat-rolls being daily hawked about or sold in the market, while fresh butter is a daily article. It is the nearest approach to home that I have had for a long time. This country (Kano) is the finest and best cultivated I have seen." Students in search of information on the British possessions in Africa, may find it in *The Geography of the British Empire*, an interesting volume from the pen of Mrs. Bray.

The question of iron shipping has been so much discussed of late, that a few particulars as to its progress and merits will prove interesting to non-professional readers. In a paper by Mr. J. Vernon, of Liverpool, read at the Institution of Mechanical Engineers, we find that the number of iron sailing-ships and steamers built and registered in the United Kingdom in 1851 was fifty-five, comprising a tonnage of 15,826 tons; in 1862, the number was two hundred and nineteen, and the tonnage 106,497 tons. Compared with timber-built vessels, this shows a remarkable increase in the use of iron, from which we may infer that the conviction as to the superiority of the latter grows every year stronger. Iron offers greater strength than wood, greater durability, and less cost, larger carrying capability as a ship, greater facility of construction, and a more certain supply of the material. Compared with timber, the cost of an iron ship is fourteen per cent. less. A 1200 ton timber ship, with rigging and outfit complete, weighs 1080 tons; an iron ship of the same tonnage weighs 900 tons. The internal capacity of the timber ship is 93,343 cubic feet, equal to 933 tons,

at 100 feet per ton. The iron ship, on the contrary, because of the reduced thickness of the sides and bottom of the hull, has a capacity of 1108 tons. Then, as to facility of construction; when we remember that iron can be fashioned into the exact shapes and sizes required, and used at once, while wood must be grown, sawn, and kept a long time to season, the economy of iron over wood becomes strikingly apparent.

Some of the iron steamers now employed in the coal-trade have the further advantage over wood, that they can take in water as ballast. In this trade, the vessels commonly get no return-freight, and must consequently go through the tedious and laborious operation of taking in and throwing out ballast. The iron collier has a water-tight chamber constructed beneath her hold, and after discharging her cargo of coal, the sea-cocks are opened, the water rushes in, fills the chamber, and so ballasts the vessel without effort. On return to the coal-port, the water is either pumped out, or if the vessel can be laid dry at low tide, is let to run out of itself. A steamer carrying seven hundred tons of coal has space for one hundred and seventy tons of water-ballast.

In the construction of flat-bottomed boats for river navigation, iron is especially useful. In this form it has been turned to good account in the exploration and navigation of rivers in Africa, America, and India. On the Indus, floating steam-trains have been introduced, having a paddle-wheel steamer foremost, with a round stern, which fits into the concave bow of the barge behind it. To this are attached other barges, making in all a length of six hundred and forty feet. Large quantities of merchandise are thus transported by one steamer; but owing to the frequent windings of the stream, there appears to be some difficulty in steering.

Mr. Bessemer argues in favor of steel. He shows that the hull of H.M.S. *Minotaur*, constructed of wood and iron, weighs six thousand tons; the armor weighs nearly two thousand tons more. But if steel had been used for the ribs, the weight of the hull would not have been more than four thousand tons, which would have allowed of the use of armor-plates nine inches thick, without rendering the armed vessel heavier than the ship above named, with her plates of four and a half inches thick. On the question of

guns, which is also an important one, Mr. Bessemer states that he can produce a block of steel, twenty tons' weight, from such a block would be stronger than one fluid cast-iron in twenty minutes. In this there would be no weld or joint; but it is not yet proved that a gun fashioned from such a block would be stronger than one built up by the coil process.

From the Westminster Review.

THE PHYSIOLOGY OF SLEEP.

THERE is much about sleep that is familiar to all: there is much that is at present known to none: there is much also that to many seems mysterious, which nevertheless, when rightly considered, is clear and comprehensible. We propose in the following pages to discuss especially certain of the phenomena of sleep, which have been the subjects of recent scientific investigation, and to refer to the more familiar phenomena only as they are associated with processes of internal change hitherto little thought of or altogether unrecognized. With respect to the many deeply interesting points upon which we have neither information to give, nor explanation to suggest, we would only say, that these, like all other phenomena and laws of nature as yet beyond our ken, although unexplained hitherto, must not be regarded as therefore inexplicable for ever; nor because uninvestigated and unknown at present, as therefore mysterious and beyond our future powers of research. It seems to have been—nay still to be—very generally supposed alike by physiologists and metaphysicians, that the nature of sleep is peculiarly inexplicable, and veiled in impenetrable mystery. Such a supposition is erroneous and mischievous. Erroneous—inasmuch as it attributes to assumed obscurity of the subject difficulties which arise from our own ignorance and inaptitude: mischievous—inasmuch as it neces-

sarily tends to chill the spirit of inquiry, and to stay at their very commencement researches fraught with scientific interest and practical importance.

Now, in order to arrive at a full conception of the nature of sleep, and to learn from its phenomena all we may of the secrets of our being, we must study thoroughly both its anatomy and physiology, so to speak; and not confine our attention to its psychology alone, as most philosophical writers have hitherto been content to do.

Every one has some general idea, founded on personal experience, of what is meant by sleep. And yet, strange as it may seem, it is by no means easy to give a satisfactory description, much less an accurate definition, of this familiar but truly wonderful state. It is even difficult, as Sir H. Holland observes, "to distinguish that which is its most perfect condition—the condition furthest removed from the waking state." Some maintain that we are conscious, others that we are unconscious, during sleep. Some assert that we always dream when asleep, others that dreams occur only between sleeping and waking, or during imperfect sleep. Indeed, on these and many other points connected with our subject, the greatest possible diversity of opinion prevails among different writers. Such diversity of opinion may be to a certain extent explained by the following considerations. First—the sleeping experiences of differently constituted individuals differ in the same way, though by no means in the same degree, as their waking experience; and hence different observers, judging each from his own experience, may have arrived at somewhat different conclusions. Secondly—"Sleep is not a unity of state,

* *Le Sommeil et les Rêves. Etudes Psychologiques sur ces Phénomènes et les divers Etats qui s'y rattachent.* Par M. L. F. ALFRED MAURY. Paris: 1862.

On Sleep. By Sir H. HOLLAND. In "Chapters on Mental Physiology." 2d edit. London: 1858.

The Physiology of Sleep. By ARTHUR E. DURNHAM. In "Guy's Hospital Reports." London. 1860.

but a series of fluctuating conditions;" and thus it may have happened that some have regarded one *phase*, and some another phase, as the most perfect. Thirdly—Many theories of sleep have evidently been adopted because of their conformity with favorite metaphysical creeds, rather than because of their accordance with the simple teachings of experience and observation.

Sir H. Holland and Mr. Durham, regarding the subject from perfectly distinct points of view, express their opinions as to the nature of sleep in very different terms. The former considers sleep in its most general, the latter in its most special, acceptation. Sir Henry Holland writes as follows:

"Sleep, in the most general and correct sense of the term, must be regarded not as one single state, but a succession of states in constant variation—this variation consisting, not only in the different degrees in which the same sense or faculty is submitted to it, but also in the different proportions in which these several powers are under its influence at the same time. We thus associate together under a common principle all the phenomena, however remote and anomalous they may seem;—from the bodily acts of the somnambulist; the vivid, but inconsequent trains of thought excited by external impressions; the occasional acute exercise of the intellect; and the energy of emotion—to that profound sleep in which no impressions are received by the senses; no volition is exercised; and no consciousness or memory is left, on waking, of the thoughts or feelings which have existed in the mind. Instead of regarding many of these facts as exceptions and anomalies, it is sounder in reason to adopt such definitions of sleep as may practically include them all."—p. 15.

Mr. Durham, on the other hand, says:

"Considered *psychologically*, I think sleep may be best defined to be a state in which volition, sensation, and consciousness are suspended, but can be readily restored upon the application of some stimulus. 'That sleep alone is healthy,' says Dr. Wilson Philip, 'from which we can be easily aroused. If our fatigue has been such as to render it more profound, it partakes of the nature of disease.'

"Considered *physiologically*, sleep may be most correctly regarded as that particular state of cerebral inactivity which is essentially associated with the nutrition and repair of the brain substance."

These descriptions—we can hardly call them definitions—of sleep are by no means opposed to one another, as they

may at first sight appear. Both, we think, may be accepted as true, though neither conveys the whole truth. Their apparent difference manifestly arises from the fact that Sir H. Holland speaks of *actual*, Mr. Durham of *typical* sleep. The one, therefore, describes sleep as it ordinarily occurs; the other, the most perfect sleep that can be conceived. The observations and experiments which Mr. Durham adduces, and the line of argument he pursues in his interesting paper, not only fully support his own hypothesis, but tend also to show, *a priori*, why sleep must necessarily be, as Sir H. Holland rightly maintains, "a succession of ever-varying states."

Every part of the body the office of which is vital, not simply mechanical, passes through alternate periods of rest and action. "The heart pauses after each pulsation, and every breath we draw is followed by a period during which the nerves and muscles of respiration repose before they are again aroused to action." Every one knows that it is impossible to maintain very long any particular position by unaided muscular exertion. After a certain period of action the muscles require a proportionate period of rest. So also with the organs of sense—the brain and every other vital part. These alternating periods of rest and action vary in duration in different parts. Thus the heart acts and rests seventy or eighty times, and often more, in a minute. The voluntary muscles can be made to maintain their active condition for several minutes; and the organs of sense and brain for longer periods. But in all cases the due proportion of rest to action must be accorded, or the health of the part inevitably deteriorates. Every-day experience teaches us that this is true: physiology shows us why it must be so.

During each period of action the tissue of the part (that is to say, the material substance of which it is made up) is consumed and wastes;—during rest the tissue is nourished, and the waste repaired. Temporary inaction appears to be essential to perfect repair. Different parts of the same organ, as for instance different parts of a muscle of the brain, may no doubt be in different conditions at the same time. One part may be in action and undergoing waste, while another part is at rest undergoing repair; but there is reason to believe, as we shall by

and by be able to show, that in the same part the two conditions of action and waste, on the one hand, and of rest and repair on the other, can not coëxist; or at any rate, if they do, only for a time, inasmuch as, sooner or later, the waste outruns the repair. We do not know—we can not even guess—the precise nature of this intimate connection between waste of tissue, and development of function (or action) of a part; but that such a connection exists we have ample evidence.

We sometimes hear the expression, "the lamp of life." The simile is by no means a bad one. When a lamp is duly prepared and lighted, chemical action is started. This action goes on for a time; the oil is consumed; heat is developed, and light is manifest. By and by fresh oil must be added and the lamp trimmed. While it is burning, the products of its combustion—the new substances formed by the chemical action going on—must be got rid of, or they would speedily extinguish the flame. Just so it is with the tissues of our body. Let the proper stimulus be supplied to any living, healthy part—say brain, or say muscle—and it becomes as it were lighted up. In this as in the former case, chemical action is started, chemical change goes on, the material is consumed, and the products of its destruction must be conveyed away. But in this instance, instead of heat and light, we have developed heat and the *manifestation of the life*—or, in a word, the function—of the part. Whether the chemical changes which take place in the flame of the lamp are the cause of the heat and light, or whether the heat and light are the cause of the chemical changes, we can not tell. Neither can we tell whether the chemical changes which go on in certain organs of our body are the cause or the consequence of their functional activity. This much is certain in both cases—the particular chemical changes are inseparably associated with the more visible phenomena; and when the material is exhausted, or from any other cause the normal processes of chemical action are interfered with or stopped, the other phenomena are modified or altogether cease.

Consciousness, sensation, volition, emotion, and intelligence, are all manifestations of the brain's functional activity. Concomitantly with the manifestation of these the highest attributes of our being,

and to a proportionate extent, chemical changes take place in the brain which necessarily involve the destruction of certain portions of its substance. In order that the waste may be repaired, temporary cessation from action is, as we have seen, requisite. Functional activity of the brain, then, as manifested by sense and intellect, emotion and will, together with destruction of brain-substance, may be regarded as the essential psychological and physiological conditions of perfect wakefulness; and rest of the brain, (suspension to a greater or less extent of those faculties which are the manifestations of its activity,) together with repair and nutrition of brain substance, may be regarded as the corresponding conditions of perfect sleep.

Now, if what has already been advanced be true, it is evident that great and palpable differences must exist between the state of the brain during sleep and that which is associated with the performance of its marvelous functions during waking life. "It is plain," says Sir Benjamin Brodie,* "that in some respects the condition of the nervous system must be different during sleep from what it is when we are awake; but it seems impossible that we should know in what that difference consists, when we consider that neither our unassisted vision, nor the microscope, nor chemical analysis, nor any analogy, nor any other means at our disposal, enables us to form any kind of notion as to the actual changes in the brain or spinal cord on which any other nervous phenomena depend." From the opinion thus expressed, Mr. Durham does not hesitate to dissent; and he appears, as far as we are able to judge from his paper, fully to justify the belief he expresses: "that the examination of the living brain, [exposed as he describes, especially when the eye is aided by the microscope,] together with the careful consideration of certain obvious analogies, may do much toward enabling us to penetrate the mystery of the subject, and to advance some steps in the right understanding of the true nature of sleep, and of some other conditions of the nervous system."—p. 2.

Considered *anatomically*, so to speak, sleep may be described, in accordance with the views of Mr. Durham, as a state

* *Psychological Inquiries*, part i. p. 134.

in which the blood-vessels of the brain are occupied by a comparatively small quantity of blood moving at a comparatively slow rate.

"During sleep the brain is in a comparatively bloodless condition; and the blood in the encephalic vessels is not only diminished in quantity, but moves with diminished rapidity."—p. 24.

That such a state of circulation in the brain is actually present during sleep has been proved by observation and experiment. A case is recorded by Caldwell,* and quoted by Durham, of a woman at Montpellier, who "had lost part of her skull, (from disease,) the brain and part of its membranes lying bare. When she was in a deep or sound sleep, the brain lay in the skull almost motionless; when she was dreaming, it became elevated; and when her dreams (which she related on waking) were vivid or interesting, the brain was protruded through the cranial aperture."

Blumenbach also describes cases in which, portions of the skull having been lost, "he witnessed a sinking of the brain during sleep, and a swelling with blood when the patient awoke."

Similar cases have been, and are to be, met with from time to time—indeed, there is one such under the writer's observation at the present time; but the evidence afforded by them is necessarily more or less incomplete and unsatisfactory. The brain and its membranes, when exposed in the human subject, by accident or disease, have always more or less lost their normal appearance before accurate comparative observations can be made with safety to the patient.

Now it occurred to Mr. Durham, "that the artificial exposure of the brains of living animals might afford opportunity for more definite observation" than could be made in such cases as those alluded to. Accordingly he performed numerous experiments upon different animals. "The results obtained were uniform when the necessary and accidental difficulties of the case were successfully overcome."

Mr. Durham describes his method of proceeding, and what he witnessed, as follows:

"A dog having been thoroughly chloroformed, a portion of bone about as large as a shilling

was removed from the parietal region of the skull by means of the trephine, and the subjacent dura mater partially cut away. The portion of brain thus exposed seemed inclined to rise into the opening through the bone. The large vessels over the surface were somewhat distended, and no manifest difference in color between the arteries and veins could be distinguished. As the effects of the chloroform passed off, the animal sank into a comparatively natural and healthy sleep. Corresponding changes took place in the appearance of the brain; its surface became pale, and sank down rather below the level of the bone; the veins were no longer distended. Small vessels containing blood of arterial hue could be distinctly seen, and many which had before appeared congested and full of dark blood, could scarcely be distinguished. After a time the animal was roused; a blush seemed to start over the surface of the brain, which again rose into the opening through the bone. As the animal was more and more excited, the pia mater became more and more excited, and the brain-substance more and more tinged with blood; the surface was of a bright red color; innumerable vessels, unseen while sleep continued, were now every where visible, and the blood seemed to be coursing through them very rapidly; the veins, like the arteries and capillaries, were full and distended, but their difference of color as well as their size rendered them clearly distinguishable. After a short period the animal was fed, and again allowed to sink into repose; the blood-vessels gradually resumed their former dimensions and appearance, and the surface of the brain became pale as before. The animal slept in a perfectly natural manner. The contrast between the appearance of the brain during its period of functional activity and during its state of repose or sleep was most remarkable."

In order to obviate certain objections, actual or possible, Mr. Durham, in some of his experiments, "replaced the portions of bone removed by accurately fitting watch-glasses, and rendered the junction of their edges with the bone air-tight by means of inspissated Canada balsam." The different appearances of the brains of animals thus treated could be satisfactorily observed through the windows in their skulls, and "were found to correspond as nearly as possible with the above description."

Whatever may be the opinion of Antivivisectionists as to the justifiability of Mr. Durham's operations, there can be no doubt that the results he obtained are most interesting and valuable. They place beyond question what might possibly have been *a priori* supposed, but certainly could never have been so satisfactorily proved in any other manner.

* *Psychological Journal*, vol. v. p. 74.

Now the skull can not alter in capacity from time to time so as to adapt itself to the ever varying state of its contents; neither can the brain itself (as far as its proper substance is concerned) be supposed to undergo any notable changes in bulk in the course of a few minutes or seconds; and yet the cavity of the skull must always be completely filled. How, then, it may be asked, can there possibly be more blood in the vessels of the brain at one time than another? The consideration of the difficulty thus indicated has led many physiologists into the error of supposing that the total quantity of blood in the encephalic vessels must always be the same, but is differently distributed between the arteries, capillaries, and veins during different states of the brain. But the fact is, the brain and its membranes, their blood vessels and contents, *never* entirely fill the interior of the skull. There is, in addition, a fluid called the cerebro-spinal fluid, which occupies to a greater or less extent certain cavities in the brain, (the ventricles,) and also the space between two of the membranes of the brain—namely, the visceral layer of the arachnoid and the pia mater. This fluid appears, as far as we at present know, to be subservient to mechanical purposes only. It has been proved by experiment to be very variable in quantity. It can very readily be taken up into the blood vessels, or driven out of the skull into the spinal canal, on the one hand, or, on the other, under changed conditions, equally readily secreted, or rather simply exuded from the blood vessels, or forced up from the spinal canal into the skull, by atmospheric pressure acting through the soft parts of the body. Magendie, Hilton, Ecker, and other physiologists, have demonstrated experimentally the great rapidity with which this fluid can be absorbed and produced according to circumstances; and as Mr. Durham observes, "it is evident, from the anatomy of the parts, that as the encephalic blood vessels become distended, the fluid can easily pass from the ventricles to the base of the brain, and from the subarachnoid spaces within the cranium into that of the spinal canal. When, on the other hand, the amount of blood in the vessels undergoes diminution, the pressure of the atmosphere on the surface of the body (transmitted by the soft tissues) causes the reëscut of an equivalent amount of cerebro-spinal fluid." It

may further be added, that for purely physical reasons—in other words, in accordance with the recognized laws of endosmosis and exosmosis of fluids—the distended state of the vessels and the rapid movement of the blood through them, which we have seen to be associated with functional activity of the brain, favor absorption, whereas the opposite conditions of the vessels and their contents associated with repose favor secretion, of the cerebro-spinal fluid. Thus the constant repletion of the cranial cavity is maintained, and at the same time the necessary variation in the quantity of blood circulating through the vessels of the brain is permitted.

The correctness of the conclusion at which we have now arrived as to the comparative state of the cerebral circulation during sleeping and waking, although most clearly established by methods which few have opportunity or inclination to pursue, is nevertheless confirmed by everyday facts patent to the observation of all.

It is further supported by the experience of the physician in the treatment of patients whose chief complaint is their "want of sleep."

First, there is a beautiful experiment, ready prepared by nature, of which almost every one may make use. The bones of the skull of a newly-born infant are, as is well known, so far separated that variations in the state of the cerebral circulation and the comparative quantity of blood within the cranium may be to a certain extent appreciated by the touch, for the superficial structures are thin and yielding. If these openings in the skull (or Fontanelles) are carefully examined, it will be found that, corresponding to them, there are slight depressions of the surface when the infant is asleep, slight elevations when the infant is awake, and proportionately greater elevations during periods of unusual excitement. Again, every one knows that a hot head with "flushed cheeks and throbbing temples, but cold clammy hands and feet, and a general pallor and sense of chilliness over the surface of the body," are conditions very unfavorable to sleep. In such a case the vessels of the brain are manifestly full and the cerebral circulation active. On the other hand, it is equally well known that coolness of the head with warmth of the extremities are invariably associated with easy sleep; and such conditions imply a comparatively large supply

of blood to the general surface rather than to the brain. In many cases of sleeplessness from over-excitement of the brain, Mr. Durham tells us—and general experience will bear out his statement—that “a warm bath, or even immersion of the feet and legs in hot water, acts like a charm.” He adds: “The explanation is obvious. An increased quantity of blood is drawn to the surface of the body, even to the extremities, and proportionate relief is given to the long-distended vessels of the brain.” The atmospheric boot of Junot, and the centrifugal bed of the elder Darwin, two instruments designed to induce sleep, (by processes apparently very uncomfortable, to say the least,) owed their efficacy to the fact that they drew or diverted the blood from the head toward the extremities, and thus tended to diminish the activity of the cerebral circulation. But perhaps some of the most striking practical illustrations of the correctness of Mr. Durham's views regarding the nature of sleep are afforded by certain results obtained by Dr. John Chapman, to which we would for a moment allude.

In the *Medical Times and Gazette* of 18th July, 1863, Dr. Chapman published a paper, since reprinted,* on “A New Method of treating Disease by controlling the Circulation of the Blood in different parts of the Body.” In this paper he says:

“I have discovered that a controlling power over the circulation of the blood in the brain, in the spinal cord, in the ganglia of the nervous system, and, through the agency of these nervous centers, also in every other organ of the body, can be exercised by means of cold and heat applied to different parts of the back. . . . If it be desirable to increase the circulation in any given part of the body, this I have found myself able to effect by exerting a soothing, sedative, depressing, or paralyzing influence (according to the amount of power required) over those ganglia of the sympathetic which send vaso-motor nerves to the part intended to be acted on. This influence may be exerted by applying ice to the central part of the back, over a width of from four to four inches and a-half, and extending longitudinally over the particular segments of the sympathetic and of

the spinal cord on which it is desired to act. For example, intending to direct a fuller and more equable flow of blood to the brain, I apply ice to the back of the neck and between the scapulæ. . . . The thoracic and abdominal viscera can be influenced in like manner; while the legs and feet can have their circulation so increased that they become thoroughly warm by ice applied to the lower part of the back.”

On the other hand, the application of heat to the same parts (by means of hot-water bags) produces opposite effects, lessening the circulation in the parts under the control of those portions of the nervous centers along the back over which it is applied.

Now the bearing of Dr. Chapman's discovery upon the subject we are discussing is at once obvious. He has already published evidence that cold applied to the back of the neck increases the cerebral circulation, and with it the functional activity of the brain. He has, moreover, most kindly furnished us privately with the details of numerous cases under his observation but not yet published, which show, in the most striking manner, that heat applied to the back of the neck palpably diminishes the circulation in the head, and at the same time favors, or rather, actually induces, sleep. We can not forbear adding that we consider Dr. Chapman's observations deserving of the most attentive consideration, both of the scientific physiologist and the practical physician.

We may next proceed to inquire, why comparative fullness of the blood-vessels of the brain and rapidity of the circulation are thus associated with waking activity, and why the opposite conditions are associated with sleep.

We have already alluded to the fact that peculiar chemical changes go on in the brain concomitantly with, and in a measure proportionate to, its functional activity. These chemical changes appear, from recent investigations, to consist principally in the oxidation of certain portions of the brain-substance. If this be true, it is plain that a rapid and large supply of arterial or highly oxygenized blood must be to the brain what a large and free current of air is to a lamp or furnace. It affords a due supply of the element essential to the particular chemical changes which have to take place. And, further, much in the same way as a good blast not only supplies oxygen abundantly,

* See appendix to *Functional Diseases of Women: a New Method of treating them through the Agency of the Nervous System by means of Cold and Heat.* By JOHN CHAPMAN, M.D. London: Trübner & Co. Some account of this pamphlet is given in our review of the *Contemporary Literature of Science* (Section 3.)

but also serves to carry off from the furnace or lamp the products of combustion, so the rapidity with which the blood courses through the vessels during functional activity not only supplies oxygen to the tissue, but favors absorption into the vessels of the products of disintegration, and materially contributes to their speedy removal from parts where their presence would be injurious.

On the other hand, absence of distension of the vessels, and comparative slowness of the current, are conditions which do not supply sufficient oxygen for functional activity, but which, according to simple physical laws, favor that exosmosis of nutrient material into the tissue which is necessary for repair.

Whatever may be the nature of the vital processes by which nutrition (or the incorporation of fresh material with living tissue) is effected, there can be no doubt that nutrient materials pass from the capillary vessels into the tissue, and the products of the disintegration of the tissue from the tissue into the vessels by the recognized physical process called osmosis.

The causes to which are immediately due the changes in the character of the cerebral circulation we have been discussing, are by no means easy to discover. We know that the arteries are kept *en rapport* with the particular state of the organ to which they are distributed, through the medium of the sympathetic nervous system, and that through the same medium their caliber is regulated in accordance with the changing requirements of the part they supply. We know also that "the interchange of relations" between the blood in the vessels and the tissue outside, has much to do with the development of the peculiar forces of the circulation which act in the capillary portions of the vascular system. It may, therefore, be that Mr. Durham is not far from correct in suggesting that:

"When the brain is stimulated (by whatever means) to action, its affinity for oxygen is increased, or at any rate is especially permitted to come into play. The *vis a fronte* thus developed causes the oxygenized blood to be drawn very rapidly onward. The increased afflux of blood produced necessarily distends the capillaries by mechanical action. Many vessels which, during the unstimulated state of the organ, admitted only the liquor sanguinis, now permit the passage of oxygen-bearing cor-

puscles, while those through which corpuscles previously passed now admit them in vastly increased numbers. The quantity of blood and its velocity are both increased. The 'circulation of function' becomes established, and the most favorable conditions for the mutual reaction of oxygen and tissue are supplied. Again, when the stimulus to action ceases to operate, or when from any other cause the tendency to oxidation of tissue is diminished, the *vis a fronte* undergoes a corresponding diminution, and the blood that flows onward is lessened both in quantity and velocity. As a necessary consequence, the capillaries (no longer subject to a powerful distending force) reassume, in virtue of their elasticity, their original dimensions. The 'circulation of nutrition' supervenes, and the conditions most favorable to repair of the tissue are supplied."

Mr. Durham adds a suggestion which from its practical bearing appears especially worthy of note. He says:

"If, from continued functional excitement of the organ, the distension of the capillaries has been unduly protracted, their walls—like all other elastic bodies kept long on the stretch—are slow to recover themselves. Under such circumstances, the circulation of nutrition is not readily established. *Some explanation is thus afforded of the difficulty we experience in obtaining sleep after excessive mental activity.*"

There would appear to be a strong *a priori* probability that the brain-substance itself varies in susceptibility, and that its readiness to undergo the normal chemical changes of functional activity bears a certain relation to the degree of nutrition attained, and to other possible influences, at the existence of which we can only guess, and of the nature of which we are absolutely ignorant. And thus it may be that a high degree of susceptibility and great proneness to chemical change on the part of the brain-substance are essential conditions of wakefulness, while the reverse are essential conditions of sleep. But we have not yet advanced beyond the *a priori* probability that such differences may exist at different periods in the healthy brain-substance. We have no idea in what they can consist, nor how they can be brought about. We are acquainted, however, with one fact, a consideration of which may help us to explain why functional activity of the brain is normally succeeded by quiescence, wakefulness by sleep, altogether independently of any supposed alteration from time to time in the susceptibility of the

brain or in the chemical stability of the brain-substance.

It is well known that, as a general rule, the products of any chemical action interfere by their presence with the continuance of the process to which they owe their origin, long before the necessary materials are exhausted. For example, butyric and lactic acids, unless neutralized, or otherwise got rid of, almost as rapidly as they are formed, check, or even completely stop, the processes of fermentation by which they are severally produced. Again, the sulphate of zinc, as it accumulates in the cells of a galvanic battery, diminishes the chemical action by which correlatively electricity is developed, long before the acid is exhausted. And so in numberless other instances. Now, bearing all this in mind, and at the same time recognizing the indubitable fact that the same laws of chemical action prevail in the living body as out of it, we can not resist the conclusion that the products of oxidation of the brain-substance, or of other chemical changes in the brain, when they have accumulated to a certain extent in the tissue or the blood, must, by their presence, tend to diminish the chemical action by which they have been produced. We have, it is true, no direct evidence that the products of brain-disintegration are ever formed in a state of health faster than they can be got rid of; but we have such evidence in the analogous case of muscle. Immediately after prolonged or violent muscular exertion, the products of oxidation of the tissue, (Kreatin, Kreatinin, etc.,) can readily be found in the part experimented upon in much larger proportion than after a period of rest. It is interesting to consider that thus there are generated compounds which, after a certain period, interfere with the mutual reaction of oxygen and tissue, and by so doing, tend *directly* to prevent over-exhaustion or too great consumption of material; and further, tend *indirectly* to induce at the right moment that state of repose which is essential to repair. "This view," it may be remarked, "is supported by the fact that retention in the body of the products of its waste is almost invariably associated with peculiar lassitude and drowsiness."

If what we have advanced be admitted, it becomes manifest *why* sleep, as we actually experience it, *must be* "a succession of ever-varying states."

In the first place, certain periods of time are obviously requisite for those changes to take place in the character of the circulation which we have seen to be the necessary accompaniments of changes in the physiological condition of the brain. Such periods may be longer or shorter, according to circumstances. They correspond to the intervals between sleeping and waking, and are associated with intermediate conditions of the circulation such as were distinctly observed in Mr. Durham's experiments. "When we are soundly asleep, we do not instantaneously awake to full possession of our faculties; still less do we pass at once from perfect wakefulness into a state of healthy sleep." During such intermediate periods occur those dreams (of all dreams the most common) which we experience between sleeping and waking.

In the second place, the progress from the state in which material is, to a certain extent, expended, and products of disintegration are, by their presence, diminishing the activity of vital affinities, to the state in which expended material is replaced, and waste products are got rid of, must necessarily be *gradual*. The condition of the brain itself also, and its consequent susceptibility to influences, (external and internal,) must pass, during such progress, through a series of variations.

In the third place, it is easy to understand, in accordance with the views expressed, that different portions of the brain may be in very different conditions at the same time. For example, some portions may pass either more slowly or less perfectly; others more rapidly or more completely from the active and wasting, to the quiescent and repairing condition. There is every reason to believe that different parts of the brain perform different functions, or, in other words, are subservient to the development of different faculties. If, then, some parts can continue in action while others are at rest, we may advance a step in our explanation of the continuous dreaming which is familiar to some during habitually recurring hours of imperfect sleep, when the will is in abeyance and the consciousness awake—not to material objects acting through the senses—but to mysterious processes of internal change; when faded pictures, photographed, as it were, in the memory are restored, and, it may be, displaced and distorted by the imagination. Such con-

tinuous dreaming may almost be regarded as imperfect waking rather than as imperfect sleep. It is, at any rate, a condition of constant change.

Very much might be added in support of what we have stated as to the physiological nature of sleep and the anatomical conditions associated with it. It would, however, be impossible to exhaust the subject; and we think we have said enough to commend the views we have expressed to the consideration of our readers. We can not but give our general assent to the opinions both of Sir H. Holland and Mr. Durham upon the several questions we have been discussing. Sir H. Holland's admirable essay can not fail to be read, even more extensively than it has yet been, with pleasure and advantage; and Mr. Durham's observations and suggestions merit the attention both of the psychologist and practical physician as well as of the student of physiology.

M. Maury puts forward, on certain points, very different opinions to those we have been maintaining. He believes, for example, that during sleep the brain is in a state of "passive congestion." His opinion, however, is based on theoretical grounds rather than on correct observations carefully interpreted, and is manifestly opposed to well-known facts. Congestion of the brain, passive as well as active, is common enough as a morbid con-

dition, and it not unfrequently proceeds so far as to produce a greater or less degree of insensibility and unconsciousness. In such a case, if the patient recovers, instead of waking up refreshed and invigorated as he would from sleep, he is depressed and exhausted.

M. Maury, however, is a psychologist rather than a physiologist, and appears to have directed his attention to phenomena of the mind rather than to conditions of the brain. His book is very interesting, and contains matter of considerable value. Perhaps the most important facts are those which relate to a very extensive series of experiments and observations made upon himself, by the aid of a friend, with the view of learning something of the nature of sleep, and especially of the mental phenomenon associated with it. His method consisted in causing himself to be suddenly roused up, under different circumstances and in different ways, at various stages in the transition from waking to sleeping. His own experiences, and the observations of his assistants, were immediately noted down. The general results at which M. Maury arrived have, as he states them, apparently much more to do with the psychological than with the physiological aspect of sleep. We reserve them, therefore, for discussion in a future article on the "Physiology of Dreaming."

From the London Intellectual Observer.

O P T I C A L G H O S T S .

THE old mode of obtaining spectral illusions by means of concave mirrors presented many difficulties, which were practically insuperable when the images were required to be on a large scale, and to be comparable in sharpness and apparent density with actual and similar objects seen at the same time. Lately these difficulties have been wonderfully overcome, as the "Patent Ghosts" exhibited at the Polytechnic, and elsewhere, abundantly testify. So great has been the popularity

of these exhibitions that, now the mystery is out, and an explanation is offered by Mr. Direks to the public, the book* purporting to reveal the secret would have been widely welcomed had it been better written, and confined to its legitimate subject. Mr. Direks complains of others, and probably with reason; but about

* *The Ghost, as produced in the Specter Drama, Popularly Illustrating the Marvelous Optical Illusions, called the Direksian Phantasmagoria.* By HENRY DIREKS, C.E. Shaw.

quarrels of this kind the public care little, and when they pay their money for the little book entitled *The Ghost as Produced in the Specter Drama*, by Henry Dircks, Civil Engineer, they do not expect to find nearly all of it devoted to a partially intelligible account of grievances with which they have nothing to do. The amount of explanation given will prove provokingly small, and, to those unacquainted with optics, of little use; while those who are familiar with that science did not want it at all. Mr. Dircks' merit in the patent ghost business appears to consist in the fact that he saw how to utilize the long-known principles involved in the neutral tint reflector, used by microscopists as a substitute for the more expensive *cámara lucida*. In this instrument a little plate of thin glass is placed so that the eye looks at it at an angle of forty-five degrees, and receives the reflection of the image which the microscope forms of the object on the stage. Thus the eye is affected, not quite so strongly, but just in the same way as if it had looked straight down the microscope tube; and if a piece of white paper is held below the reflector, the object will appear projected upon it, and the eye can, in addition to receiving the reflection, look through the glass and see the hand and pencil by which the outline is traced.

To make this kind of action plainer, let a few simple experiments be performed, and let the reader remember that the angle of incidence is always equal to the angle of reflection, and that objects seen in a looking-glass seem just as far behind it as they are actually before it. If any of our young readers do not distinctly understand the angle of incidence question, they can easily resolve it with marbles or bagatelle balls. Let them place a box, with square sides, on the table, and make a chalk line, so as to form a perpendicular to one of its sides, and falling on the center. Then, if a marble is bowled against the box so as to strike it slantingly on one side of the perpendicular, it will be thrown back in a similar slant on the other side of the perpendicular. The rays of light behave like the marble or bagatelle ball in this respect.

For our first experiment, take a hand looking-glass, and see your face in it; then incline the bottom of the glass away from you till your face is quite lost, and then your body, or hand, if in the way, will,

appear plainly. You lose sight of the reflection of your face because the angle of the rays from it which fall upon the glass is such that the resulting angle of reflection sends them away from you. You see your body, or hand, because the angle of their incident rays is such that the resulting angle of reflection carries the image straight to your eyes. Old writers were well aware of the fact that a plane mirror could be so arranged that a person looking at it should not see himself, but see something else, which might be behind a screen, and quite out of his natural view. It is, indeed, very easy to make a looking-glass show you objects quite out of your line of vision, and one of the facets of a moderate-sized diamond will easily enable you to see by reflection any object in a room, when you appear only to be looking at the finger that carries the ring in which it is set.

Having made a few experiments with the looking-glass, take a pane of window glass, or, what is better, if you have it, a piece of plate glass, the surface of which is more true, and hold it upright on the table near a window. A few inches in front of it place any small object on the table; a lady's cotton reel will do extremely well. Stand upright with your back to the window, but leave room for the light to fall freely on the top of the reel. Look slantingly down at the glass and you will see the image of the reel reflected by its surface, and apparently as far behind as it really is before. The top on which the light falls will be brilliant, and the part that is in the shade will be reflected in shadow. Vary the experiment by placing a second reel, exactly like the first, as much behind the glass as the other is placed in front of it. You then have two reels presented to your eye, one actual, and the other spectral, and you can, as Mr. Dircks remarks of a similar case, so arrange the objects, and your position, that the image reflected from the surface of the glass shall exactly correspond with the outlines of the real reel seen *through* the glass. If you put any small article on the top of the reel in front of the glass, or some one else puts a similar object on the top of the reel behind the glass, the optical effects will be the same.

Now make a third experiment. Put a box, or thick book, in front of you, so that you can not see the reel, when placed

on the table just under its edge. Then hold the glass a little way off, and upright as before, so that you see it from top to bottom. You may then obtain a reflected image of the reel, which the book conceals, and if a strong light were thrown upon it, the image would be as sharp, distinct, and apparently solid as the reality.

Thus this kind of optical ghost is very easily made, and Mr. Dircks suggests a few effective tricks. We have not dwelt at any length upon verbal explanations, because every body can make the simple experiments suggested, and they will explain the matter much better than a lengthened essay could effect. We ought, however, to add, that Messrs. Horne and Thornthwaite supply a portable apparatus, by which the Dircksian ghosts can be easily and strikingly shown.

Mr. J. H. Brown, acting upon another set of optical principles, offers us *Ghosts Everywhere and of any Color*.* We need not stay to comment on the explanatory part of this volume, but proceed to the pictures, which are drawn and colored so as to excite similar images on the retina in accidental colors. Our readers have no doubt often tried the experiment of sticking colored wafers on a sheet of white paper, holding them in a strong light, and staring at them fixedly for a few seconds. If this is done, and the eye then taken off the wafer, and turned on to the white paper, the wafer's image will appear sharp and distinct, but in another color. A red wafer will look green, (or blue and yellow combined,) a blue one orange, (or red and yellow combined,) a yellow one purple, (or blue and red combined,) and wafers of composite hues will be affected in an analogous way. These "spectral," "accidental," or "complementary" colors—for they are known under these three appellations—appear bright to the eye in proportion to its sensitiveness to the original color, to the strength of the illumination, and to the steadiness with which the original object has been contemplated. Mr. Brown finds the time occupied in counting twenty, or about a quarter of a minute, sufficient to impress his figures upon most eyes, if the plates are well lit up. His directions are to look steadily,

for the time specified, at a dot or asterisk to be found in each plate, "the plate being well illuminated by either artificial or day light. Then turning the eyes to the ceiling, the wall, or the sky, or, better still, to a white sheet hung on the wall of a darkened room, (not totally dark,) and looking rather steadily at one point, the specter will soon begin to make its appearance, increasing in intensity, and then gradually vanishing, to reappear and again vanish."

The Brownian specters depend upon the tendency of strong impressions to remain a little while upon the eye, and to reappear in accidental colors. The plates are certainly very effective, and well designed for the purpose; but we should recommend an avoidance of needless horrors in future series. The grotesque and the beautiful will both work just as vividly as the ghastly, and several objects in the present series could not be judiciously introduced to the notice of boys and girls whose disposition was nervous, or whose superstitious feelings had been excited by injudicious nursery tales.

Mr. Brown's direction to enlarge the spectral appearance by looking for it on a white sheet, or wall, some distance off, is very ingenious, and brings us back to the microscopic neutral tint reflector with which we started. This reflector enables drawings to be made much larger than the actual image which the microscope transmits to the eye. Suppose, for example, the image represented an insect one inch long, and the draughtsman tried to sketch it with a long pencil on a sheet of paper placed on the floor, he would have to make a picture on the floor, as big as an object must be to equal in apparent size a far smaller object nearer the eye. This may be made plain by a diagram, and plainer by an experiment. Take, for example, a sixpence, and hold it at such a distance from the eye that its diameter exactly equals that of a large picture across the room. Then the sixpence, at so many inches, and fractions of an inch, from the eye, looks as broad as the great picture so many feet off. For a second illustration, hold the sixpence steadily in front of the eye, about six or eight inches off, and let some one else stand by the wall and make a mark corresponding with the circular space the sixpence hides. In this case the great circle, so many feet or yards off, is equivalent to the little sixpence at six

* *Spectropia, or Surprising Spectral Illusions, showing Ghosts Everywhere and of any Color.* By J. H. BROWN. First series, with sixteen illustrations. Griffiths & Co.

or eight inches off. In the instance of the image reflected by the neutral tint glass used with the microscope the pencil was employed to trace out an outline that would be equivalent to the reflected image seen much closer, and in Mr. Brown's

enlarged ghosts, the optical image takes the size of his plates, as they appear at a convenient distance from the eye, but they *seem* as big as they would look if drawn on a larger scale on the wall on which they are *fancied* to appear.

From the London Quarterly.

ROME IN THE MIDDLE AGES.*

THE sight of Rome, while it brings us near, as nothing else can bring us in the same degree, to the men and to the actions of the city's ancient days, makes us, at the same time, realize in a manner altogether peculiar the vastness of the interval which separates us from them. We can trace, in some cases with certainty, in others with reasonable confidence, places of which the names, or the memories connected with them, have been familiar to us from childhood. But what a change has passed over all! Temples and palaces are gone, or there remain of them only some shattered pillars and some massive but ruined walls; nay, the very soil is piled up to the height of many feet above the pavement on which the ancient Romans trod, and quarters which once swarmed with a busy population are now given up to tillage, or left to utter neglect. "We find," as Goethe says, "the marks of a grandeur and of a destruction which alike transcend our conceptions."

It is across the gulf which separates the imperial splendor of Rome from its present state of desolation and decay that Mr. Gregorovius undertakes to guide us. His subject includes that which Gibbon originally intended to treat, but afterwards exchanged for one of far wider scope—the history of "the decline and fall of the city;" and, while disclaiming

all rivalry with the greatest of modern historians, he tells us that, like Gibbon, he conceived the idea of his project while full of the impressions produced by his first visit to Rome. But with the fall of the city his work embraces also that renewal which, by a process unique in the history of the world, began with the decline of ancient Rome, and long advanced side by side with it, until at length the city of the Cæsars had become the city of the Popes.

Mr. Gregorovius had been enabled, by a residence of some years in Rome, not only to furnish himself thoroughly with local knowledge, but to profit by the assistance of the Roman antiquaries, and to consult unpublished manuscripts, together with a vast mass of topographical books and pamphlets which it might be impossible to find elsewhere. But his sojourn in Rome and his love for the city have in no degree abated his German spirit; and in the antagonisms of Germany and Italy he never hesitates to declare himself boldly, or rather he is eager to make opportunities of declaring himself. In so far as the cry of "Italy for the Italians" may be directed against the Greeks or the Saracens of former times, or the French of our own day, he heartily sympathizes with it; but as to the Germans, it is very different.

He holds that the Teutons, by whatever name they may be called—Goths, Lombards, Franks, Germans—did all the good that has been done in Italy from the time of Alaric downwards, while all the evil has been done by the Greeks, the French, or the Italians themselves.

The period which Mr. Gregorovius pro-

* *Geschichte der Stadt Rom im Mittelalter vom fünften Jahrhundert bis zum sechzehnten Jahrhundert.* Von FERDINAND GREGOROVIOUS. Vols. I. to IV. Stuttgart. 1859-62.

Die Gräbmäler der Römischen Päpste. Von F. GREGOROVIOUS. Leipzig. 1857.

Die Papst-Fabeln des Mittelalters. Von G. J. I. VON DÖLLINGER. München. 1863.

poses to include in his work extends from the reign of Honorius to the capture of Rome by the Constable de Bourbon in 1527; and the four volumes already published bring down the story to the end of the twelfth century.

When Honorius, in 403, led up the Capitoline hill the triumph won by the arms of Stilicho at Pollentia, the buildings of imperial Rome were yet standing in their grandeur. From the sixteen gates of the city radiated twenty-eight great roads, most of them lined by splendid memorials of the dead, and the surrounding Campagna was thickly studded with temples and villas, chapels and tombs, over which rose, in every direction, the long and lofty lines of the fourteen aqueducts. But a large part of the population had already been drawn away by the attractions of the new capital on the shores of the Bosphorus; the Palace of the Cæsars had suffered through the absence of emperors who preferred Nicomedia or Constantinople, Milan or Ravenna; and the temples of the old religion, although undestroyed by violence, were closed and abandoned to neglect.* Yet our author shows good reasons for believing that the ecclesiastical writers of the time have gone somewhat beyond the truth in their representations of the temples as already fallen into ruinous decay, and of the statues as every where thrown down. With regard, too, to the ravages of the barbaric hosts which, from the time of Alaric, in 410, successively captured Rome, there is perhaps a yet more evident tendency to exaggerate their effects. Jerome, Augustine, Orosius, and their followers, seeing in the calamities of the imperial city the vengeance of Heaven against idolatry and sin, were naturally led to make the most of it. But if the religious motive was too strong with them, the feeling of Teutonic nationality seems to draw Mr. Gregorovius somewhat too strongly in an opposite direction. He is eager to extenuate as much as possible the amount of damage done by one invader after another.

* In the vexed question of the population of ancient Rome, Mr. Gregorovius adopts M. Dureau de la Malle's estimate, which rates it as having never reached six hundred thousand. He supposes that, in the troubled half century which followed the time from which his history starts, the number, already much reduced, was lessened by one hundred thousand or more, so that after Genseric's invasion it little exceeded its present amount.—i. 216.

The question is an old one, nor has Mr. Gregorovius by any means gone furthest among those who have maintained his side of it; but we should trust his conclusions more if his patriotic motives were less forced on our attention. It was not in one or two such attacks that the ruin of Rome was effected. From the sack by Alaric to the great and crowning destruction by the Normans in 1084, it was the object of contending hosts—the prey of successive assailants: and to the ravages of armies were added many other causes of destruction—hurricanes and earthquakes, floods and fires; but the main cause of the ruin of ancient Rome was the change from Paganism to Christianity. Few temples became churches, and religious motives combined with the distresses of the time in consigning to desolation the theaters and other places of diversion.

As the popes increased in wealth, they built churches more and more, and, by a system which seems to have inherited its principle from the old Roman polytheism, the multiplication of churches was carried on with a regard, not to the number of the inhabitants, (for whom they were vastly too many,) but only to the number of saints who might be so honored. Pillars and ornamental marbles were transferred from temples to churches, the buildings from which they had been torn being abandoned to ruin; nor was it for the churches of Rome only that this spoliation was carried on, for Charlemagne removed some pillars to Aix-la-Chapelle, and Pope Victor III., while Abbot of Monte Casino, adorned the church of his monastery with antique columns from Rome. The first notice of the practice of destroying public edifices for the sake of the materials is found in an edict of the Emperor Majorian, who, in 458, forbade such things under heavy penalties (i. 221); but at a later time, when the popes became independent, and were able to dispose of the ancient buildings of their city without asking the consent of the emperor or of the Exarch, the demolition was freely carried on (ii. 344).

"The nobles, even the abbots, erected towers on splendid monuments of antiquity, the citizens established in public baths and circuses their workshops, forges, ropewalks, and cloth manufactories. When the fisherman near the bridges, or the butcher at the theater of Marcellus, or the baker, offered his wares for sale, they lay

on the finest slabs of marble, which had perhaps once served as seats for the masters of the world, for Cæsar, Mark Antony, Augustus, or the multitude of senators, in the theater or the circus. The beautiful sarcophagi of heroes were now used as water-vats, wash-tubs, or pig-troughs, as at this day; the table of the cobbler or of the tailor might be nothing less than the cippus of an illustrious Roman, or a slab of alabaster on which the noblest matrons of Rome had once spread out the ornaments of their toilet. For centuries Rome was like a great lime-pit, into which the most precious marbles were cast, to be burnt into mortar.—(ii. 565-6.)

Theodoric ordered some marble pillars to be removed from the Pincian Palace to Ravenna, and, as Belisarius afterward resided in the palace, we do not see that Mr. Gregorovius is justified in assuming that it must have been already ruinous when the Gothic king interfered with it (i. 285). But Theodoric was so far from being a Goth in the unfavorable sense which we have learnt to attach to the word, that he bestowed especial care on the preservation of the monuments of Rome. He appointed officers to see that the buildings and other objects of antiquity should not be injured: one officer under him was styled "Guardian of the Statues," another was "Count of the Aqueducts." He did much to restore and maintain the wall of the city, and directed that in new constructions the ancient style should be followed. Nay, he complains of the Romans for doing those very acts of damage which have since been wrongfully charged on his own nation (i. 278-284). The real date of the decay of Rome, according to Mr. Gregorovius, is from the fall of the Gothic monarchy; and he has a peculiar satisfaction in drawing attention to the fact that, when Belisarius was besieged in Rome in 537, the statues which adorned the Mausoleum of Hadrian were destroyed, not by the Gothic assailants, but by the Greek defenders of the place, who hurled them down on the besiegers. Throughout the struggles between Belisarius and his Gothic opponents, when each party in turn became besiegers and besieged, our author maintains that the Goths were innocent of all barbarian outrage; that Totila, for instance, although he is still held guilty of the destruction of the city by many who acquit Alaric, abhorred the thought of wanton devastation, and in plundering was remarkably moderate (i. 416-421). But after the time of Belisarius, Rome,

with its population thinned by war, by emigration, by hunger, and disease, rapidly sank.* In the end of the century we find the Lombards at the gates of the city, and Gregory the Great, in discourses which Mr. Gregorovius characterizes as "the funeral sermon of old Rome" (ii. 49), describing the miseries of the time, which he regarded as tokens that the end of all things was near. Gregory was so far from sympathizing with the religion of ancient Rome that he even denounced the study of heathen literature. But while this fact rests on the evidence of his own letters, Mr. Gregorovius rightly acquits him of the acts which were ascribed to him by some of his admirers in the middle ages—the burning of the Palatine library and the destruction of ancient Roman monuments (ii. 97-9).

Sixty years after the death of Gregory I., the Emperor Constans II., having left Constantinople amid the execrations of his subjects, appeared at Rome, where, although stained with the blood not only of his brother, but of Pope Martin, and of others whom the West revered as martyrs of orthodoxy, he was received with great reverence by Pope Vitalian. His visit lasted only a few days, but it is memorable in the history of the city from his having carried off the bronze tiles of the Pantheon, which had been converted by Boniface IV. (A. D. 609) into a church. Then followed the Iconoclastic controversy, memorable as having given the chief impulse to the separation of Italy from the empire. Mr. Gregorovius, we are surprised to find, takes part with those extreme Romanists and extreme Protestants who, while utterly differing in their estimate of the act, represent Pope Gregory II. as having renounced his allegiance and stirred up Italy to revolt (ii. 255). For a confutation of his views, we content ourselves with referring to Dr. Döllinger's work (pp. 151-5), and with expressing our surprise that a writer, who is free from vulgar controversial bias in such matters, should have taken up an opinion hitherto advocated only by the zealots of either party. One effect of the controversy was, that, while the adherents of images were persecuted by the Eastern emperors, many pictures were brought from Constantinople to the West—among them, probably, most of the dark and

* Lord Broughton's *Italy*, i. 377.

grim Madonnas ascribed to the pencil of St. Luke; and that many artists were driven to seek a refuge at Rome (ii. 275). By these were executed some of the stern and awful mosaics which still exist in the tribunes of the older Roman churches. But while we agree with Mr. Gregorovius as to the impression which these works produce on a modern spectator, we cannot think with him that the severe representations of the Saviour had a large share in driving men to seek after lower and less repelling mediators with Heaven; for the severity of expression seems to have resulted merely from want of skill in the artists, nor, in so far as we know, are the faces of the Blessed Virgin or of other saints, as represented by the same school, at all more benign or attractive.

Passing over the disorderly time during which the nobles of the Campagna attempted to control the Papacy, and even succeeded in forcing into it a pope of their own, Constantine, who paid terribly for his short-lived dignity, we come to Adrian I., the cotemporary of Charlemagne, and to Leo III., from whom, on Christmas Day, 800, the Great Frankish hero received the imperial crown. The pontificates of Adrian and Leo form an era in the architectural history of Rome; for almost every church of the city was either rebuilt or largely altered and redecored by the munificence of these popes (ii. 26, 30). But, unfortunately, their wealth and care were not always employed in a manner which would entitle them to our gratitude. Mr. Gregorovius remarks that—

"The innumerable multitude of churches and convents rendered great plans impossible. For this reason, then (if there were no others), we discover a certain smallness in the Roman church architecture of the Carolingian period. The decoration of the friezes under the roof with tile-edges; the composition of the towers, which are generally small, out of arched windows parted by little pillars; the ornamentation of the surfaces of the towers with round plates of marble of various colors; the depressed vestibules, with their little pillars and their mosaic friezes, adorned here and there with medallions in mosaic—all this gives evidence of diminished standards of view."—(iii. 27.

Rome was now again the capital of the Western Empire, while the temporal power of the popes, founded in reality by the donations of Pepin and Charlemagne, was

carried up to a far more venerable origin, and invested with a supposed title to far wider dominion, by the forged donation of Constantine to Pope Sylvester. But the relations of the Papacy and the Empire were full of strange anomalies, and it was after this time that the Papacy itself passed through its worst degradations. In relating the story of the dark tenth century, Mr. Gregorovius does his best to throw a veil of decency over the unsavory memories of the Theodoras and Marozia, while he dwells on the abilities and energy of Pope John X. (the supposed paramour of the elder Theodora), and of Alberic of Tusculum, the son of Marozia, by a father whom he supposes to have been of Teutonic descent. But we must hurry over the times of these personages, of the Othos, and of the Saxon and Frankonian emperors who followed them, until we reach the pontificate of Gregory VII. Of the importance of Gregory in the history of the Papacy we need not now speak; but we may extract from Lord Broughton's *Italy* a sketch of the destruction which was brought on the city of Rome by this Pope's contest with Henry IV.:

"To this time must be ascribed the final extinction of the city of the Cæsars. The Emperor, Henry IV., the troops of the pope's nephew, Rusticus, and the Normans of Robert Guiscard, were more injurious to the remains of Rome, from 1082 to 1084, than all the preceding barbarians of every age. The first burnt a great part of the Leonine city (that is, the Vatican quarter), and ruined the portico of St. Peter's (a covered passage which then connected the church with the Castle of St. Angelo); he destroyed also the long portico from the Ostian gate to the church of St. Paul. In his last irruption he leveled a part of the Septizonium to dislodge Rusticus, razed the fortresses of the Corsi on the capitol, and battered the Mole of Hadrian. The Normans and Saracens of Guiscard's army, with the papal faction, burnt the town from the Flaminian gate to the Antonine column, and laid waste the sides of the Esquiline to the Lateran; they set fire to the region from that church to the Coliseum and the capitol, or, according to some authorities, to the Tiber. He attacked the Coliseum for several days, and finished the ruin of the capitol. It is reasonable to believe that the flames were arrested by the wilderness which had before existed to the south of those positions, and indeed in other quarters. The conflagration of Guiscard created or confirmed a solitude much more extensive than is embraced by that 'spacious quarter between the Lateran and the Coliseum,' to

which it is confined by Gibbon. From that period, at least, must be dated the desolation of a great part of the Esquiline, and all the Viminal, and much of the Cœlian hill, including the irretrievable ruin, perhaps, of the Coliseum, and certainly of many of the remaining structures of the forums and the Sacred Way. A cotemporary writer (Bonizo, Bishop of Sutri) says that all the regions of the city were ruined; and another spectator (Hildebert, Archbishop of Tours), who was in Rome twelve years afterwards, laments that, although what remained could not be equalled, what was ruined could never be repaired."

Gregory's last words, "I have loved righteousness and hated iniquity, therefore I die in exile," might serve as a type of the Papal history for centuries after his time. Not, of course, that we can identify, as Gregory did, the love of righteousness and the hatred of iniquity with an inflexible desire to raise the Papacy to universal and despotic empire; but that he and his successors, while they steadily pursued their great object of exalting the Papacy, were continually involved in troubles which destroyed their peace. It was the period when the Papacy was strongest against all other powers; when the great movement of the crusades gave it such a sway as had never before been known over the whole of Western Christendom, and even extended its dominion and its influence widely in the East; yet the popes themselves were oftener in banishment from their own capital than masters of it. Emperors and anti-popes, nobles and democratic factions, in turn expelled them; and we find them sometimes wandering in countries beyond the Alps, sometimes establishing their temporary court in some small provincial town, such as Viterbo, Tusculum, Anagni, or Orvieto, until the time of the "Babylonian captivity" at Avignon. In those days the chief buildings of Rome were occupied as fortresses by powerful families. St. Peter's itself was fortified, and had often to bear the brunt of war; and although Calixtus II., after having ended for a time the strife between the Church and the Empire by the Concordat of Worms, enacted at the Lateran Council of 1122, that churches should not be "incastellated," the practice continued long after. German emperors came to Rome to receive the crown, and the day of their coronation was very commonly wound up by a bloody conflict with the Romans. German armies invaded Italy, committing all

sorts of ravages, and were usually driven back, with their numbers fearfully reduced, by pestilence arising from the unwholesome climate. With the neighboring towns the Romans were engaged in continual feuds, of which that which ended in the utter destruction of Tusculum (A.D. 1191) is a memorable example (iv. 584). There were frequent revolutions and changes of constitution, which Mr. Gregorovius faithfully relates, although as to this part of his subject he speaks with a modest diffidence which it is to be wished that other writers would imitate. The present volumes end just before the election of Innocent III., who became pope at the age of thirty-seven, and during a pontificate of eighteen years carried out to their highest triumph the principles which had been enounced by Hildebrand a century and a half before. There is much of interest in that part of the history which yet remains to be told; but it is not for us to go before our author, and, having thus generally sketched the outline, we shall now turn to some of the details, which we propose to take in a kind of topographical order, beginning, of course, our imaginary walk through Rome from the modern "Burg of the English."

The first object that we notice is the Mausoleum of Augustus. Of its present condition we have lately spoken in reviewing Mr. Story's *Roba di Roma*. Originally, as it was seen and described by Strabo, it was covered with earth, on which grew a grove of trees. In later times, the legend ran that Augustus caused a basketful of earth to be brought from every province of his dominions, "that so he might, as it were, rest in the earth of the whole world which he had ruled." From its form it was styled in the middle ages "*Mons Augustus*," and in the feuds of the Roman factions it became a fortress of the Colonnas (iii. 575).

Proceeding onwards, we come to the Ælian Bridge (now the Bridge of St. Angelo), which leads to Hadrian's mausoleum or mole. The bridge itself was the scene of many a fight between parties which held possession of the opposite sides of the river, the most memorable of them being that which took place on the day of Frederick Barbarossa's coronation (A.D. 1155). The earliest description of the Mole of Hadrian is said to be that by

Procopius ("Bell. Goth." i. 22), which, however, is very slight, and leaves ample room for the play of fancy in attempting to restore the building on paper. He mentions that its upper part was adorned with splendid marble statues of men and horses, which, as we have already seen, were in great part thrown down by the garrison under Belisarius on their Gothic besiegers. At that time, probably, the mausoleum had already acquired the name of "Theodoric's Prison," by which it continued to be known until in the tenth century it became the "Tower of Crescentius;" and there the Consul of Rome held out until (whether by fair or by foul means is disputed) he fell into the hands of Otho III., by whom he was put to death (A.D. 998). Here, too, Gregory VII. was forced to take refuge, when his imperial enemy, whom he had humbled to the dust at Canossa, had gained the rest of Rome, and had enthroned an anti-pope in St. Peter's. The modern name is derived from a story of uncertain date, but which relates to a time earlier by four centuries than that of Crescentius. In the year five hundred and ninety the pontificate of Pelagius II. had closed amid deep and general distress. Many buildings had been destroyed by a fearful inundation, in which it was believed that multitudes of serpents, and among them one of enormous size, were seen swimming down the Tiber. Pestilence and famine followed; for the waters had carried away the public granaries, with the stores of corn collected in them. The first act of Gregory I., on being elected the successor of Pelagius, was to institute a solemn procession in order to entreat the removal of these calamities. Clergy, monks, and nuns, with innumerable mourners and penitents of all classes, wound their way slowly through the streets, chanting doleful litanies; and even as they were moving along, eighty persons dropped from the ranks of the procession and fell down dead. But when the Ælian Bridge had been reached, on the way to St. Peter's, an angel was seen above the Mole of Hadrian, sheathing his flaming sword in token that the plague was stayed; and three angels were heard in the air singing the anthem *Regina Celi*. In memory of this, Benedict XIV. erected on the top of the Castle of St. Angelo the figure of the Archangel Michael (ii. 24-36).

Of St. Peter's itself we shall say little, for, although the name frequently occurs in our author's pages, it designates a different building from that which now exists. The original foundation is ascribed to Constantine, who is said to have himself begun the excavation, and to have carried twelve baskets of earth in honor of the twelve apostles (i. 89-90); and the old basilica, although often repaired and embellished, remained in its essence until in the fifteenth century it was swept away to make room for the grand work of Michael Angelo and his successors. Among its benefactors, Honorius I. is especially celebrated as having decorated it lavishly with gold, silver, and mosaics. But the wealth and splendor of the church suffered greatly through an attack of Saracens, who in 846 sailed up the Tiber, and, besides other acts of spoil and profanation, carried off the massive silver covering with which the monothelite pope had adorned the apostle's tomb. In one respect, old St. Peter's has been more fortunate than many other buildings which no longer exist, inasmuch as its appearance has been preserved to us in several representations—the latest of these being Raphael's fresco of the "Incendio del Borgo," where Leo IV. appears in the balcony of the church, quenching the flames by his benediction.* In the course of ages a vast mass of buildings had grown up around it, even before the Vatican Palace was founded by Nicolas III., and among these was the earliest bell-tower in Rome, erected by Stephen II., who was pope from 752 to 757. Such towers are among the features which mark the transition from the basilican to the mediæval style of church architecture; and in the middle ages, when no place was too sacred to be attacked, they served for military purposes, as well as for the professed object of their erection (ii. 343-6). Although there is much cause to regret that in the building of the present church too little care was taken for the preservation of remarkable objects, a good deal still remains to carry back our memories to older times. The tombs of popes which crowded the ancient porch were swept away by Julius II., but many fragments of them still remain in the crypt—the earliest being that of Boniface IV. To the crypt, too, have been transferred the

* As to this fire, see vol. iii. 103-4.

remains of Otho II., and of his kinsman the young German Pope, Gregory V., together with the mosaic which formerly adorned the wall above the emperor's tomb in the porch (iii. 420). The modern portico still displays the inscription composed by Alcuin and set up by Charlemagne in honor of Adrian I. (ii. 504); and the sarcophagus of the Consul Anicius Probus in the chapel of the Pietà, with that of Junius Bassus in the crypt, belongs to the fourth century. From the older church, too, comes the bronze statue of St. Peter, whose foot is kissed by devotees of all classes, from the supreme pontiff to the beggar. A legend tells us that Leo the Great, on his return from that mission to Attila which is the subject of Raphael's famous fresco, celebrated the success of his mediation with the barbaric invader by recasting the bronze Jupiter of the capitol into this figure of the chief of the apostles. The legend symbolizes the great change from paganism to Papal Christianity; but as to its truth there is much room for doubt, and Mr. Gregorovius thinks it likely that the Jupiter of the capitol, instead of undergoing this significant transformation, was among the plunder which was carried off by Genseric and was lost at sea (i. 196, 212, iii. 252).

We now suppose ourselves to be in the Borgo of the English, the ancient haunt of pilgrims from this country—among them of kings who put off their royalty to end their days as monks in the Holy City (ii. 212-14). The whole of the Vatican quarter was defenseless until, after the outrages of the Saracens which we have mentioned, Leo IV. enclosed it with fortifications, of which the high tower above the Papal gardens may serve as a relic and a specimen. It was chiefly with a view to the maintenance of the English hospital and "school" in this quarter that the payment of Peter-pence or "Romescot" was originally imposed by Offa on his subjects (ii. 469); and, although the English hospital for pilgrims became, in 1204, an institution for the relief of sickness and distress, under the title of the hospital of Sto. Spirito, while the same name superseded that of St. Mary as patron of the adjoining church, the English connection with this part of Rome continued down to the sixteenth century, when Wolsey, as ambassador of Henry VIII., inhabited the palace now occupied

by the Portuguese ambassador. In the same quarter other foreign nations also had their colonies—their special churches, their hospitals for pilgrims, their schools for the young, the prototypes of the national colleges which abound in modern Rome. There were the "schools" of the Franks and of the Lombards (ii. 472-3); and the church of St. Michael in Sassia (a name which was popularly extended from the Anglo-Saxon settlement to the whole of the district) was connected with the school of the Frisians, a people who owed their first conversion to the zeal of Anglo-Saxon missionaries, Wilfrid, Willibrord, and Boniface. The church, "small, dark, and forgotten," retains its Carolingian bell-tower; and an inscription of the thirteenth century is probably correct in referring the foundation to Leo IV., although, agreeably to the spirit of its time, it defies chronology in order to bring in the great name of Charlemagne as that pope's cotemporary (ii. 470-1).

Leaving the Borgo for the Trastevere, we must not allow ourselves to be seduced from our historical objects by the glorious views which might be gained by climbing to the terraces of St. Onuphrius or of St. Peter in Montorio. But as we cast our eyes upward, Mr. Gregorovius reminds us of the antiquity of mills on the Janiculum. There they were, as they are now, until the Gothic king Vitiges, when besieging Belisarius, cut off the Aqua Trajana, which fed them. The imperial general, while pressed by this necessity, had recourse to the ingenious device of establishing floating mills—the ancestors of those which may still be seen moored in the Tiber; but it would seem that he afterwards restored the aqueduct, as it is recorded that Pope Honorius I., in the following century, built mills on the Janiculum, near the church which he had founded in honor of St. Pancras (i. 357; ii. 144).

St. Mary's, in the Trastevere, is one of the principal churches of Rome, and represents the first church which the Christians could call their own—the site having been adjudged to them in preference to the company of victuallers by the eclectic emperor, Alexander Severus. The original church was built by Calixtus I.—the bishop whose saintly memory has been so seriously damaged of late years by the discovery and publication of the *Philosophumena*. In connection with a restor-

ation of that church by Benedict III. (A.D. 855-8), Mr. Gregorovius produces a passage of the *Pontificals*, which is, perhaps, the earliest mention of the art of glass-painting — “*Fenestras vero vitreis coloribus ornavit, et pictura musivi decoravit*” (iii. 134; Anst. in Migne, *Patrol.* cxxviii. 1354). But in Rome the art of mosaic, as displayed on the walls of churches, and especially on the vault of the tribune, triumphed over the decoration of the windows, so that glass-painting never flourished to any considerable extent. The present church of St. Mary dates from the pontificate of Innocent II., in the twelfth century.

The neighboring church of St. Chrysogonus was rebuilt in 1128 by its titular cardinal, John of Crema (iv. 390), the same whose mission to England for the purpose of enforcing celibacy on the clergy is said to have been marred by the awkward discovery of his own frailty. The spire, which is, we believe, the only one in Rome, cannot be commended for its beauty; but both it and the tower are curious as bearing traces of the northern models which the cardinal had seen on his legation to this island. A later cardinal of the same church was Stephen Langton, Archbishop of Canterbury.

A third church in the Trastevere, St. Cecilia, is more interesting than St. Chrysogonus; but it is so fully described in the *Handbook of Rome* that we need not give any further notice of it. We therefore cross to the island of the Tiber, and reach the church of St. Bartholomew, founded by the young emperor, Otho III., whose strange and tragical story is so closely bound up with Rome. The intention was to honor the memory of Adalbert, Bishop of Prague, who, having twice left his see in disgust at the unruliness of his people, had lived for a time in a monastery on the Aventine, and at last, as if by way of penance for the desertion of his episcopal duty, had sought and found martyrdom as a missionary to the heathen Prussians. Otho, who had known him at Rome, and had often listened to his exhortations, was deeply touched by his end; and, after having visited his tomb at Gnesen, in Poland, undertook to erect a church of St. Adalbert in this spot, where a temple of Æsculapius had formerly stood, and where even in our own day, the sculptured form of the Epidaurian serpent carries back the thoughts to the old tales of Livy and

Ovid. The citizens of Benevento, on being required by the emperor to give up the body of St. Bartholomew for the enrichment of the new church, palmed off on him the relics of a less illustrious saint, Paulinus of Nola, and Otho, on discovering the trick, besieged their town, but without success. It would seem, therefore, very questionable whether the body of St. Bartholomew was ever here, and Benedict XIII. decided that it was still at Benevento (iii. 510-1); yet, when the church was rebuilt by Paschal II. in 1113, the name of the apostle was substituted for those of the original patrons St. Adalbert and St. Paulinus.

We reach the left bank of the Tiber and plunge into the Ghetto, with its filthy alleys, crowded by its peculiar population. The settlement of the Jews in Rome dates from the time of Pompey the Great, and their numbers were much increased after the destruction of Jerusalem; Rutilius, in his “*Itinerary*,” alludes to these facts, and laments the effect of them on Rome:

“*Atque utinam numquam Judæa subacta fuisset*

Pompeii bellis, imperioque Titi.
Latius excisæ pestis contagia serpunt.
Victioresque suos natio victa premit.”

Mr. Gregorovius thinks that the connection of the Jews—“*quorum cophinus sænumque supellex*”—with the neighborhood of the Porta Capena was “merely transitional” (i. 301). But this opinion seems to be refuted by the late discovery of a catacomb on the Appian Way, in a situation which appears to have been chosen with a view to the convenience of Jews dwelling in the quarter where they are placed by Juvenal. That this catacomb was used exclusively by Jews is proved not only by the absence of pagan and Christian characteristics, but by the constant use of Jewish symbols, such as the seven-branched candlestick, the ark of the covenant, the palm of Judea, and the like, and by the description of many among the deceased persons as having held offices connected with the synagogue—rulers, scribes, etc.* But for centuries

* Perhaps Mr. Gregorovius may have heard of the discovery of this catacomb when he expressed in his first volume (A.D. 1859) a disbelief that the Jews had any share in the catacombs of St. Calixtus (the entrance to the Jewish catacomb being very near these). But the matter is now beyond all doubt. There is a pamphlet on the Jewish catacomb by

the Jewish settlements were in the Trastevere and in the neighborhood of the bridges, and the site of their ancient synagogue, where they endeavored, in such fashion as they could, to imitate the arrangements of their ruined Temple, is still pointed out in the Transtiberine *Vicolo delle Palme* (i. 300-1). In the neighborhood of that quarter, too, there was a cemetery, outside the *Porta Portese*; but, although this was known to the Roman antiquaries of the seventeenth century, the entrance to it has since been lost. The Jews were a recognized "school" in mediæval Rome. They lived under the especial protection of the popes, and on great occasions, such as that of a pope's entrance on his office, or of his return from exile to the jubilant flock which was, perhaps, soon after to drive him out again, representatives of the synagogue were always expected to appear, displaying the book of the law, and presenting gifts in token of their homage. Mr. Gregorovius supposes that the bridge of St. Angelo was called "*Pons Judæorum*," from being the scene of such greetings (i. 300); but we are inclined to suspect that the shops with which it was formerly lined (like London bridge even in the eighteenth century, and the *Ponte Vecchio* of Florence to this day) were chiefly tenanted by Jews, and that from this circumstance the name may have been derived. Rabbi Benjamin of Tudela, who visited Rome under the pontificate of Alexander III., reports his brethren in Rome as then numbering only 200 (iv. 392, 634-5); but among this despised handful were some whose abilities or wealth made them important—the most skillful physicians and surgeons, although they were not above suspicion of unlawful arts; the greatest capitalists and money-lenders, although they were execrated for their usury and rapacity. About the middle of the eleventh century, one of the chiefs among the Roman Jews forsook the religion of his fathers, and was baptized by the name of the pope, Leo IX. The convert and his family supported the hierarchical party under Hildebrand and his successors; and in the beginning of the following century, Peter, the son of Leo, attained the highest dignities and

the most powerful influence in Rome. His wealth was increased by the skillful employment of his capital; and although Orderic Vitalis tells us that the nobles of France detested him as a "most wicked usurer," the greatest Roman families were glad to ally themselves with the sons and daughters of a house so rich and potent. For a time the Jewish pedigree seems to have been almost forgotten, and the genealogy of the Pierleoni was deduced, in common with that of other great mediæval families, and probably with equal truth, from the illustrious *Anicii* of ancient Rome (iv. 393-6). Peter, the son of Leo, died in 1128. Two years later, one of his younger sons, Peter, who had become Cardinal of SS. Cosmus and Damian, was chosen pope by a party among the cardinals, and took the name of Anaclete II., but found himself opposed by the pope of another party, Innocent II. In the contest that followed, the reproach of a connection with the synagogue, although until then unheard, was put foremost among the many reproaches which were poured forth against Anaclete by the unscrupulous Arnulf of Lisieux and other opponents. The contest was decided in favor of Innocent through the influence of St. Bernard of Clairvaux, then the virtual dictator of Western Christendom: yet Anaclete maintained his pretensions to the last, and died in possession of St. Peter's. The Pierleoni, although they had failed in the attempt to set up a pope from among themselves, long continued to be among the chief of the Roman nobles; and centuries later, the flatterers of the imperial house of Hapsburg sought to exalt its greatness by tracing out for it a connection with the family of the Jewish usurer.

The Pantheon is noticed at some length in connection with the pontificate of Boniface IV. For two hundred years, since the order of Theodosius the Great for the closing of the temples, this noble building had stood deserted—its huge bronze gates opened, perhaps, from time to time, by some barbarian in quest of plunder, or by some curious visitor who, when admitted within, found the statues of gods and heroes thrown down, and everything abandoned to decay. But Boniface conceived the idea of turning it to the service of Christian religion, and, having obtained the emperor's permission (which was then necessary for such a disposal of

Father Garucci. It is remarkable that, while some of the inscriptions are in Latin, some in Greek, and others in the Greek language, but in Latin letters, there are none in Hebrew.

an ancient public building), he consecrated it as a church in the year 609. The popular belief, whether rightly or wrongly, supposed it to have been a Temple of Cybele and all the gods; and in that spirit of accommodation which in many cases turned heathen into Christian rites, the Temple of Cybele and all the gods was dedicated to the Blessed Virgin and all martyrs. By this character the Pantheon, alone among the ancient buildings of Rome, has been preserved to our own days, although not without suffering other injuries besides those of time. The bronze tiles of the dome were carried off (as we have seen) by Constant II., in the seventh century; those of the portico were cast by Urban VIII. into guns for the castle of St. Angelo and into the twisted pillars of the canopy of St. Peter's; and the same pope, not content with taking away, added a positive disfigurement by erecting the ugly and unsuitable bell-towers. In the thirteenth century, the oath taken by a senator of Rome bound him to defend and preserve, among other things, "the round church of St. Mary;" but, from the connection in which it is mentioned, we think with Lord Broughton (ii. 132) that the object of this oath was rather to secure the Pantheon to the pope as a military post than to preserve it as a venerable and beautiful monument of antiquity.

Crossing the Corso in the region of the Via Lata, which in the middle ages was the most fashionable quarter for residence, we arrive at the oblong Piazza de' SS. Apostoli, where stands the palace of the Colonna family. This palace is connected with the memory of Alberic and the counts of Tusculum, who formerly possessed its site. The first appearance of the Colonnas in history is in the year 1101, when Petrus de Columpna was master of Monte Porzio and other places near Tusculum, together with the castle of Columna, among the Alban Mountains, which by some writers has been identified with the ancient Labicum; and from that castle, rather than from the pillar of Trajan, which figures in their arms, the name of the family is derived (iv. 303-4). Peter appears to have been an offshoot of the counts of Tusculum—perhaps a nephew of the young scapegrace Benedict IX., who was thrust into the Papacy by the Tusculan family, and was deposed at the council of Sutri, in 1046. But the popular

belief of the middle ages accounted for the rise of the Colonnas by a more romantic story, which is incidentally given by Professor Döllinger:

"A smith in Rome observed that his cow every day took a way of her own. He followed her, crept after her through a narrow hole, and found a meadow with a building in which stood a stone pillar, with a brazen vessel full of money on the top. He was about to take some of the money; but a voice cried out to him, 'It is not thine; take three pence, and thou shalt find in the forum the man to whom the treasure belongs.' The smith obeyed, and going to the forum, threw down the three coins in three different places. A poor, despised lad found all three, became thereupon the smith's son-in-law, bought great possessions with the money from the pillar, and so founded the house of Colonna."—p. 38.

It was after the destruction of Tusculum and the extinction of its counts in the direct line that the Colonnas, as their kinsmen, came into possession of their palace and property in Rome (iii. 326).

Close to this is the site of Trajan's Forum—in the days of imperial splendor the most magnificent part of Rome. The triumphal arch which adorned it was stripped of its sculptures in order to enrich the Arch of Constantine, and in the course of ages the whole of the splendid buildings which adorned the forum were swept away, and their foundations were covered with rubbish or with modern houses, so that we are indebted to the excavations of the French under the first Napoleon for bringing to light the remains of the Ulpian basilica. It was in this form, according to the legend, that Gregory the Great was struck with the sculptured representation of Trajan's kindness towards a poor widow whose entreaties moved him to dismount from his chariot when starting on a warlike expedition, and to delay until he had done her justice for the death of her son. The thought that so good a prince should have been involved in the doom of the heathen affected the pope deeply. As he proceeded from the forum to St. Peter's, he wept continually over Trajan, and prayed for his deliverance; and in the church he was rewarded by an assurance from Heaven that his prayer was heard, while he was warned that such intercession for departed heathens was not to be repeated. The story was famous throughout the middle ages, and received various

additions; according to one form of it (devised, no doubt, for doctrinal reasons), the pope restored Trajan to life and baptized him, and when the rite was completed the emperor's body fell again to dust, while his soul was received into heaven (ii. 86-7). The Romans of the middle ages watched over Trajan's pillar with affectionate pride. Thus, in 1162, when it had become the property of the nuns of St. Cyriac's, we find a decree of the Roman senate that it should be preserved "whole and incorrupt, with its figure upright, so long as the world shall last" (iv. 641).

From the Forum of Trajan we ascend the Quirinal. Here stands the church of St. Sylvester in *Capite*, so called from possessing the head of St. John the Baptist, or rather one of his many heads; for Amiens, St. Acheul, St. Jean d'Angely, and perhaps other places, assert rival claims. But the same church possesses also a relic of yet more remarkable pretensions—the portrait of the Saviour, which He himself is said to have impressed on a cloth and sent to King Abgarus of Edessa (iii. 350, 642). It was in front of this church that Leo III. was attacked by a party of ruffians, headed by two of his predecessor's nephews, who endeavored to blind him and cut out his tongue, dragged him into the church, where they renewed their attempt, and left him lying before the altar as if dead (iii. 525-6). He was healed of his wounds in the monastery, and escaped across the Alps to tell his sufferings to Charlemagne at Paderborn; and the outrage is memorable in the history of the world, as having led not remotely to the imperial coronation.

On the height of the Quirinal now stand the two famous colossal statues, which, with the horses attached to them, are described by inscriptions as the work of Phidias and Praxiteles. From them one of the Crescencian family in the tenth century was styled "of the marble horse." The names of the two great Greek sculptors appear to have been connected with these figures (however incorrectly) in the imperial days, but conveyed no idea to the men of the middle ages. Phidias and Praxiteles were then supposed to have been two young philosophers, who appeared at Rome in the reign of Tiberius. On being asked by the emperor why they went about naked, they answered that it

was because all things were naked and open before them, and undertook to tell him his most secret thoughts. Their promise was performed, and, as they declined all further recompense, the emperor caused these figures to be erected as a memorial of them. The horses stamping the earth signified the rulers of the world; the naked figures of men, with their arms raised and their hands closed, were interpreted as reckoning the coming of a time when a mightier King should appear, who should mount the horses, in token of subduing the masters of the world (iii. 404-5).

We retrace our steps, and on our way to the church of St. Agatha pass through a part of the Via Magnanopoli—a name of disputed etymology. The church of St. Agatha, "of the Goths," was given up by Ricimer to the Arian worship of his barbaric soldiery (i. 235; ii. 83). After it had stood deserted for some years it was dedicated in honor of St. Agatha by Gregory the Great, who in one of his *Dialogues* (iii. 30) has given an account of the miracles connected with the reopening. During the mass on the consecration-day, a pig was felt by many persons in the crowded congregation to run between their legs, until he made his way out at the door; but no one saw him. This flight of the unclean animal signified, of course, the purification of the church; but the demons who had possessed it continued to alarm the faithful by noises and other prodigies, until at length the completeness of the purgation was signified by the descent of a thick cloud of inconceivable fragrance, and by the repeated miraculous lighting of the lamps.

St. Agatha's has been modernized out of all interest, and even the heart of O'Connell, which is preserved in it, is not attractive to our countrymen in general. But all who have been in Rome know the Church of St. Peter in Vincoli, remarkable for the view from the piazza in front of it, for its fine antique pillars, for the awful Moses of Michael Angelo, for the small picture by Guido in the sacristy, and for the great apostle's chains, from which it has its name. These chains, we are told, were divided between Rome and Jerusalem, until Eudoxia, the Athenian rhetorician's daughter, who became the Empress of Theodosius II., got possession of the portion which was preserved at Jerusalem, and sent half of it to her daugh-

ter Eudoxia, the Empress of Valentinian III. The newly-acquired part, on being applied by Leo the Great to that which was already at Rome, became at once firmly joined to it, and this church was built in honor of the precious relic (i. 213). From the time of Gregory the Great it became usual for popes to send filings of the chains to princes and others as a token of favor, accompanied by a prayer that they might serve to the spiritual benefit of the receivers. A fresco in the church represents a great plague which raged in the year 680, when it is said that good and evil angels were seen by night marking the houses of the city; and that for every blow which the evil angel struck with his lance on the door of any house, one of the inmates was found dead next day. But this legend appears to have been wrongfully appropriated by the Roman St. Peter's *ad vincula* from a church of the same name at Pavia (ii. 184-5). With it is connected an altar of St. Sebastian, by whose relics the plague is said to have been removed; and over this altar is an ancient fresco, which is remarkable as displaying the saint, in the form of a severe old man, arrayed in rich embroidery—an idea for which was afterwards substituted that of the graceful and naked youth, pierced with arrows, who appears in the pictures of Perugino, Francia, and Correggio (ii. 186).

Descending the hill, we come to the

grand mass of the Flavian Amphitheater—still, after all the mutilations which it has undergone, the most imposing object in Rome, and that to which the mind most readily turns in recalling the image of the Eternal City. Its first appearance in this history is in connection with the heroic Greek monk Telemachus, who sacrificed himself to obtain the abolition of the gladiatorial shows in which the Romans had continued to delight, even when Christianity was generally professed. We need not dwell on its later vicissitudes, when it served as a fortress of the Frangipani family, or as a quarry from which modern palaces derived their materials. The first mention of its modern name, Coliseum or Colosseum, is generally referred (and by Mr. Gregorovius among others, ii. 211) to Bede, who is cited for the famous prophecy versified by Byron—

"While stands the Coliseum, Rome shall stand;
When falls the Coliseum, Rome shall fall,
And when Rome falls, the world."

But in truth the date of this prophecy appears to be quite uncertain, as the work in which it occurs seems to be wrongly ascribed to the "venerable" monk of Jarow, and, moreover, is merely a compilation of extracts, the sources or dates of which no one has taken the trouble to investigate.

[TO BE CONCLUDED.]

From Chambers's Journal.

THE LAST OF THE MOAS; OR, THE WINGLESS BIRDS.

THE gradual disappearance of species from the world of animated nature is not limited to pre-Adamite times. Instances of it have occurred not merely in modern but in recent days. The dodo was a living inhabitant of the Mauritius in the latter half of the seventeenth century, and there is reason to believe that one was exhibited in England about 1638. In the last century, a peculiar amphibious animal frequented the mouths of the great Siberian rivers, which is now seen no more. The great auk is on the verge of extinction, if

not extinct. Although the bones of this bird abound on the shores of Iceland, Greenland, and Denmark, it has been seen of late only on some rocky islands in the vicinity of the first-mentioned country; and of these, one (which took its name, Geirfulga Sker, from the bird in question) sank to the level of the sea during a volcanic disturbance in 1830, and thus further curtailed the auk's already limited breeding-ground. The hook-billed parrot of Philip's Islands has also vanished. Perhaps, however, the most re-

markable case of extinction within our own time is that of the moa, or *dinornis*. It is indeed so very recent, that we can not yet say positively whether or not the species has utterly ceased to be represented on the earth.

It is now twenty-four years since a fragment of bone, about a half a foot long, and very nearly as much in its smallest circumference, was forwarded to Professor Owen for examination. It had been found in New Zealand, where the natives ascribed it to a gigantic bird called moa, which they knew only by tradition, but which they believed might still exist in the more secluded districts of the country. The bone was part of the shaft of a femur; it was one-third as great in diameter as the femur of the largest kind of emu, and it had evidently belonged to a very large and powerful bird. Professor Owen came to the conclusion that it was a relic of a heavier and more sluggish animal, with shorter and thicker legs than the emu or ostrich, and that it probably presented proportions more nearly resembling those of the dodo than of any existing *Struthionidae*. Subsequent discoveries have confirmed, in the main, the correctness of these acute conjectures. Colonel Wakefield, Mr. Earle, Mr. Walter Mantell, Sir G. Grey, and others have sent home a great many relics of the moa. Some of these are now in the British Museum, and the College of Surgeons possesses an almost perfectly restored skeleton. These remains prove that the moa, or *dinornis*, as Professor Owen has styled it, is a wingless bird, somewhat like the apteryx, but very much larger than it or any other living bird. There are eight or nine different varieties, ranging in height from four to ten and a half feet. "The extraordinary number of wingless birds," says Professor Owen, "and the vast stature of some of the species peculiar to New Zealand, and which have finally become extinct in that small tract of dry land, suggest it to be the remnant of a larger tract or continent over which this singular struthious fauna formerly ranged. One might almost be disposed to regard New Zealand as one end of the mighty wave of the unstable and ever-shifting crust of the earth, of which the opposite end, after having been long submerged, has again risen with its accumulated deposits in North America, showing us in the Connecticut sandstones of the Permian period the footprints of

the gigantic birds which trod its surface before it sank; and to surmise that the intermediate body of the land-wave, along which the *dinornis* may have traveled to New Zealand, has progressively subsided, and now lies beneath the Pacific Ocean."

The bones of the moa are found alongside of the remains of men, seals, and birds of existing species; they have cartilage and other animal matter about them; and some have been seen in a fossilized state. Professor Owen deems it probable that the race became extinct shortly after the arrival of the first Malay immigrants. They were the only large animals in the country which could be used as food; and it is natural to suppose that they were consumed before cannibalism was resorted to. But how, it may be asked, should these great and powerful birds have perished, when the small and feeble apteryx has survived? In the struggle for existence, upon which depends the permanence of genera and species, mere size and strength count for little. The moa, being so bulky, would require a wider feeding and breeding ground than the apteryx; and hence the encroachments of men would tell more severely on the former. Moreover, its very size would render it a conspicuous and tempting object to the hunter; while the smaller bird would secure safety by its comparative insignificance. The preservation of the apteryx is also due in no small degree to its nocturnal and burrowing habits. There can, however, be little doubt that at least stray specimens of the moa were alive in New Zealand within a recent period, and probably since the foundation of the British colony. Hence, there has always prevailed a hope that a living specimen of the huge creature might still be found. Repeated searches have been made with this view. Fifteen years ago, Mr. Walter Mantell explored every district, in the North Island, where the remains of the moa had been found, and subjected the natives to a careful examination on the subject, but came back convinced that the big bird was either extinct, or represented only by diminutive descendants, no larger than the apteryx.

Although Mr. Mantell failed in catching a moa, he fell on the track of a surviving cotemporary of that bird. On one of his visits to the Middle Island, he met with some sealers, who were pursuing their avocations among the secluded creeks

and islands of Dusky Bay. One day, there were observed on the snow, which lay thick on the ground, the footprints of a large animal. After following the trail for a considerable distance, they beheld a strange bird, which was of a great size, and ran very fast. It kept ahead of the dogs for some time, but was at length driven up a gully in Resolution Island, and captured alive. It uttered loud piercing screams, and struggled violently to escape. For three or four days, it was kept alive on board of the schooner, and was then killed, cooked, and eaten by the crew, who pronounced it delicious fare. The skin, skull, and a number of the bones were fortunately preserved, and handed over to Mr. Mantell. This bird, which is now called *Notornis Mantelli*, is known to the natives as moho. It was a cotemporary of the moa, and is believed to be also extinct, for no other specimen has ever been seen alive. It is a wingless bird, about the size of a fowl, with red beak and legs, dark purple body, the back being shot with green and gold, and scanty tail.

Last year (1863), a party of enterprising gold "prospectors" crossed the hitherto impassable mountain-chain which runs along the whole length of the Middle Island, and on the west coast discovered traces not only of gold, but, as they aver, of the moa. One evening they encamped about twenty-five miles northwest of the Arrow. "It was just sundown, and they were chatting round the log-fire, before going to sleep. One of them suddenly exclaimed: "Look at that rise above us; there's some one there." The others looked in the direction indicated, and beheld an enormous bird on the crest of a bluff, about three or four hundred yards from where they were sitting. The bird seemed to be arrested by the glare of the camp-fire, squatted down, keeping its

head turned towards the light, and after a minute or two, rose and stalked off. In height, it appeared to be about seven feet, "without reckoning the head and neck." It carried its head, which was very long and flat, very much bent forward, instead of held back, as is usual with birds of the ostrich kind. The next morning, the men, armed with tent-poles, set out in pursuit of their remarkable visitor. They soon found its track, and followed it for a long way without success. Each footprint showed the marks of three claws, with an interval of a foot between each. About the same distance in the rear of the claws was the impression of a pad, and behind that again the mark of a spur. Such is the story of the "prospectors." A gentleman in New Zealand has offered five hundred pounds for a moa, dead or alive; and some of the men who profess to have seen one, have, it is said, started on an expedition to earn the reward. There is not much reason to be sanguine as to the result of the search; but if the moa exists any where in New Zealand, it is, in all probability, in this secluded region of the Middle Island. This island never was very densely peopled; and thirty years ago, it was almost depopulated by a raid of a certain tribe. Moreover, the natives were confined to the east coast by the precipitous mountain-range, running north and south. Their traditions, however, point to the land on the other side of the hills as the home of the moa; but as they also represent it as infested by the terrible taniwa, a gigantic lizard which preys on men, and as no lizard larger than eighteen inches has ever been found in New Zealand, much reliance can not be placed on this source of information. On the whole, it is to be feared that we have not much chance of ever setting eyes on a living moa.

COPENHAGEN ROYAL LIBRARY.—The Royal Library at Copenhagen, founded by Christian III., numbers at this moment no less than 400,000 volumes. It possesses, moreover, the Sanscrit manuscripts brought home by Mask, besides those of Neibuhr, and a great many most valuable and rare Icelandic MSS., chiefly useful for the history of Scandinavia.

QUEEN VICTORIA, it appears, has literary tastes. In 1834, when she was but sixteen years old, a small volume of her poems was published in pamphlet form, for distribution exclusively in the royal family-circle. The *Coburg Gazette* now announces that Queen Victoria is engaged in writing the *Memoirs of her Life and Times*.

From the *Cornhill Magazine*.

WILLIAM MAKEPEACE THACKERAY.

IN MEMORIAM.

It has been desired by some of the personal friends of the great writer who established the *Cornhill Magazine*, that its brief record of his having been stricken from among men should be written by the old comrade and brother in arms who pens these lines, and of whom he often wrote himself, and always with the warmest generosity.

I saw him first, nearly twenty-eight years ago, when he proposed to become the illustrator of my earliest book. I saw him last, shortly before Christmas, at the Athenæum Club, when he told me that he had been in bed three days—that, after these attacks, he was troubled with cold shiverings, “which quite took the power of work out of him”—and that he had it in his mind to try a new remedy, which he laughingly described. He was very cheerful, and looked very bright. In the night of that day week he died.

The long interval between those two periods is marked in my remembrance of him by many occasions when he was supremely humorous, when he was irresistibly extravagant, when he was softened and serious, when he was charming with children. But by none do I recall him more tenderly than by two or three that start out of the crowd, when he unexpectedly presented himself in my room, announcing how that some passage in a certain book had made him cry yesterday, and how that he had come to dinner, “because he couldn’t help it,” and must talk such passage over. No one can ever have seen him more genial, natural, cordial, fresh, and honestly impulsive, than I have seen him at those times. No one can be surer than I, of the greatness and goodness of the heart that then disclosed itself.

We had our differences of opinion. I thought that he too much feigned a want of earnestness, and that he made a pretense of undervaluing his art, which was not good for the art that he held in trust. But when we fell upon these topics it was

never very gravely, and I have a lively image of him in my mind, twisting both his hands in his hair, and stamping about, laughing, to make an end of the discussion.

When we associated in remembrance of the late Mr. Douglas Jerrold, he delivered a public lecture in London, in the course of which he read his very best contribution to *Punch*, describing the grown-up cares of a poor family of young children. No one hearing him could have doubted his natural gentleness, or his thoroughly unaffected manly sympathy with the weak and lowly. He read the paper most pathetically, and with a simplicity of tenderness that certainly moved one of his audience to tears. This was presently after his standing for Oxford, from which place he had dispatched his agent to me, with a droll note (to which he afterward added a verbal postscript), urging me to “come down and make a speech, and tell them who he was, for he doubted whether more than two of the electors had ever heard of him, and he thought there might be as many as six or eight who had heard of me.” He introduced the lecture just mentioned, with a reference to his late electioneering failure, which was full of good sense, good spirits, and good humor.

He had a particular delight in boys, and an excellent way with them. I remember his once asking me with fantastic gravity, when he had been to Eton, where my eldest son then was, whether I felt as he did in regard of never seeing a boy without wanting instantly to give him a sovereign? I thought of this when I looked down into his grave, after he was laid there, for I looked down into it over the shoulder of a boy to whom he had been kind.

These are slight remembrances; but it is to little familiar things suggestive of the voice, look, manner, never, never more to be encountered on this earth, that the mind first turns in a bereavement. And

greater things that are known of him, in the way of his warm affections, his quiet endurance, his unselfish thoughtfulness for others, and his munificent hand, may not be told.

If, in the reckless vivacity of his youth, his satirical pen had ever gone astray, or done amiss, he had caused it to prefer its own petition for forgiveness, long before :

I've writ the foolish fancy of his brain ;
The aimless jest that, striking, hath caused
pain ;
The idle word that he'd wish back again.

In no pages should I take it upon myself at this time to discourse of his books, of his refined knowledge of character, of his subtle acquaintance with the weaknesses of human nature, of his delightful playfulness as an essayist, of his quaint and touching ballads, of his mastery over the English language. Least of all, in these pages, enriched by his brilliant qualities from the first of the series, and beforehand accepted by the public through the strength of his great name.

But, on the table before me, there lies all that he had written of his latest and last story. That it would be very sad to any one—that it is inexpressibly so to a writer—in its evidences of matured designs never to be accomplished, of intentions begun to be executed and destined never to be completed, of careful preparation for long roads of thought that he was never to traverse, and for shining goals that he was never to reach, will be readily believed. The pain, however, that I have felt in perusing it, has not been deeper than the conviction that he was in the healthiest vigor of his powers when he wrought on this last labor. In respect of earnest feeling, far seeing purpose, character, incident, and a certain loving picturesqueness blending the whole, I believe it to be much the best of all his works. That he fully meant it to be so, that he had become strongly attached to it, and that he bestowed great pains upon it, I trace in almost every page. It contains one picture which must have cost him extreme distress, and which is a masterpiece. There are two children in it, touched with a hand as loving and tender as ever a father caressed his little child with. There is some young love, as pure and innocent and pretty as the truth. And it

is very remarkable that, by reason of the singular construction of the story, more than one main incident usually belonging to the end of such a fiction is anticipated in the beginning, and thus there is an approach to completeness in the fragment, as to the satisfaction of the reader's mind concerning the most interesting persons, which could hardly have been ever attained if the writer's breaking off had been foreseen.

The last line he wrote, and the last proof he corrected, are among these papers through which I have so sorrowfully made my way. The condition of the little pages of manuscript where death stopped his hand, shows that he had carried them about, and often taken them out of his pocket here and there, for patient revision and interlineation. The last words he corrected in print, were, "And my heart throbbed with an exquisite bliss." God grant that on that Christmas Eve when he laid his head back on his pillow and threw up his arms as he had been wont to do when very weary, some consciousness of duty done and Christian hope throughout life humbly cherished, may have caused his own heart so to throb when he passed away to his Redeemer's rest!

He was found peacefully lying as above described, composed, undisturbed, and to all appearance asleep, on the twenty-fourth of December, 1863. He was only in his fifty-third year; so young a man, that the mother who blessed him in his first sleep blessed him in his last. Twenty years before, he had written, after being in a white squall :

And when, its force expended,
The harmless storm was ended,
And, as the sunrise splendid
Came blushing o'er the sea ;
I thought, as day was breaking,
My little girls were waking,
And smiling, and making
A prayer at home for me.

Those little girls had grown to be women when the mournful day broke that saw their father lying dead. In those twenty years of companionship with him, they had learned much from him; and one of them has a literary course before her, worthy of her famous name.

On the bright wintry day, the last but one of the old year, he was laid in his grave at Kensal Green, there to mingle

the dust to which the mortal part of him had returned, with that of a third child, lost in her infancy years ago. The heads

of a great concourse of his fellow-workers in the arts were bowed around his tomb.

CHARLES DICKENS.

From Good Words Magazine.

THE WEATHER, AND WEATHER PROPHETS.

"Varium et mutabile semper."

"THERE is an ugly look about the sky, and the wind is getting up, and Fitzroy's storm-signals were hoisted yesterday evening and are up now. We shall have a gale. I am afraid we must put off our boating for to-day anyhow," said my friend A—to his wife the other day; "there may be nothing in it, but we should look very silly to come home half drowned in the face of a warning."

And it was well the lady took the advice. It was but a pleasure party after all. But the fishermen to whom the loss of a day was a serious matter, put off. Not that they altogether pooh-pooh'd the inverted cone and drum: but they reckoned on twenty-four hours' law at least, and suffered for their miscalculation. One boat came on shore in fragments, several suffered damage, and all agreed it would have been wiser to have staid at home.

An occurrence like this took place at one of our southern watering-places not far from hence, a few days ago; and the gale which followed was one of the precursors of that far more fearful one which has just (apparently) blown itself out: part and parcel, no doubt, of that great periodical phenomenon whose recurrence under the name of "the November atmospheric wave," is beginning to be recognized as one of the features of our European weather table—a vast and considerably well-defined atmospherical disturbance, peculiar, it would seem, to this portion of the globe, though originating, as we shall see reason to believe, in the opposite hemisphere, and of which the gale of the Royal Charter (October 25, 1859); the great Crimean hurricane of

disastrous memory (November 14, 1855); and the still more awful storm of December 8 (N.S.), 1703, the greatest which has ever swept this island—may be considered as shadowing out the beginning, middle, and end.

The actual barometric fluctuation to which the epithet has been affixed by Mr. Birt, who first drew attention to one of its most peculiar features, is, however, confined to narrower limits of time, and refers to one great billow or mountainous breaker (so to speak) of air, which sweeps in November across the whole North Atlantic and the European continent from N.W. to S.E., preceded and followed by sudden and violent subordinate fluctuations, embracing in their whole extent and in different years the longer period referred to.*

Meteorology, so far as prediction of the weather is concerned (which most persons consider, very erroneously, to be its only practical object), may be regarded as a science still in its infancy, though if such be the case, to judge from the voluminous nature of its records, and the multitude of books which have been written on it, its maturity, if ever attained, would promise to be gigantic indeed; were it not that the progress of all real science is towards compression and condensation, and its whole aim to supersede the endless detail of individual cases by the announcement of easily remembered and readily applicable laws. Most of the indications of the "weatherwise," from Aratus down to Foster, have hitherto

* This was written on the morning of the 2d of November, after a night of most terrific storm.

* This is the direction of the progress of the wave. That of the wind during the gales which accompany it is at right angles to that direction, or from S.W. to N.E.

been little more than what, in the language of Mr. Mill, would be called "simple connotations." The condor is circling in the sky; therefore a lion is devouring a horse below. The sheep turn their tails to the southwest; therefore there will be a gale of wind from that quarter. The "Rainbow in the morning," etc. The "Evening red and the morning gray," etc., etc. All such connotations have their value in an absolute ignorance of causes and modes of action; but it is only by the study of *these* that we learn what to connote. And there is no doubt, that since, after an immense amount of persevering labor bestowed on daily and hourly records of the weather, an insight (and no inconsiderable one) *has* been gained into the *causes which determine it*, and the sequence of phenomena which exhibit them in action, a style of connotation *has* commenced, which is already bearing practical fruit, in the form of telegraphic warnings of approaching bad weather, of positive value and interest. There can be no better proof of this than in the fact, that the example set by our own Admiralty in the establishment of a system of coast weather signals, has already been followed to a certain extent in Holland, and is in course of being so in France. Nations are perhaps not over ready in following up the improvements of their neighbors; but at all events, they are remarkably slow in adopting each other's practical blunders.

The indications of the coming weather which experience has shown to be in any degree dependable, have been embodied by Admiral Fitzroy in a sort of code of instructions or "forecasts," which have been so very extensively circulated by his praiseworthy zeal, aided by the powerful means at his disposal, that we do not consider it necessary to recapitulate them. They rely mainly on the indications of the barometer and thermometer, together with the observation of the direction and force of the wind at the time and place, and of its immediately previous course; all these particulars being regarded not *per se*, but as in connection with each other; their indications not being absolute, but relative: so that a rise in the barometer, coupled in one case with a rise, and in another with a fall in the thermometer, may indicate, under given, or, as the case may be, differing circumstances of wind, widely different or even opposite features

in the character of the approaching weather. It is to be borne in mind, however, most carefully, that all such indications are to be received as valid (*pro tanto*) only for a very brief interval in advance; and that the "weather-prophet" who ventures his predictions on the great scale, is altogether to be distrusted. A lucky hit may be made: nay, some rude approach to the perception of "a cycle of seasons" may possibly be attainable. But no person in his senses would alter his plans of conduct for six months in advance in the most trifling particular, on the faith of any special prediction of a warm or a cold, a wet or a dry, a calm or a stormy summer or winter. Of all the minor or *simply connotative* indications of the coming weather (as distinct from those which connect themselves with our knowledge of causes), the only one in which we place the slightest reliance is that the appearance of "anvil-shaped clouds" is very likely to be speedily followed by a gale of wind.

The moon is often appealed to as a great indicator of the weather, and especially its changes as taken in conjunction with some existing state of wind or sky. As an attracting body causing an "aërial tide," it has of course *an* effect, but one utterly insignificant as a meteorological cause; and the only effect distinctly connected with its position with regard to the sun which can be reckoned upon with any degree of certainty, is its tendency to clear the sky of cloud, and to produce not only a serene, but a *calm* night, when so near the full as to appear round to the eye—a tendency of which we have assured ourselves by long continued and registered observation. This, however, is more than a "simple connotation." The effect in question, so far as the clearance of the sky is concerned, is traceable to a distinct physical cause, the warmth radiated from its highly heated surface; though why the effect should not continue for several nights after the full, remains problematic.

Lunar prognostics about the weather may be classed under three several heads, namely: 1st. Simple connotations of the appearance of halos, coronas, lunar rainbows, and "a watery" moon, as prognostics of wet. No doubt they do indicate the presence of vapor, passing into cloud, in the higher regions of the air (in that of the rainbow, actual rain not far away), and so may be put on a par with the indi-

cations which may sometimes be gathered from the behavior of birds, especially such as fly high, and make long excursions, and which may convey to us some notion of *their* cogitations as to the coming weather, which are perhaps more likely to be right than our own, as founded on a wider range of perception. 2d. Purely arbitrary *laws* or *rules* founded on the hour of the day or night at which the changes of the moon take place. There is (or was a few years ago, for we believe the race is dying out) hardly a small farmer or farm-laborer who had not some faith in certain "weather-tables" in the *Farmer's Almanac*, ascribed (we need hardly say falsely) to the late Sir W. Herschel, and which went on this principle. Others, again, pressed into the service the great and recondite names of APOGEE and PERIGEE, and professed to determine the character of the lunation from her proximity at new or full to these mysterious points of her orbit. Both the one and other rule utterly break down when brought to the tests of long continued and registered experience. Others, again, drew their prognostic for the whole lunation from the character of the weather during the first quarter. Such was the rule said to have been implicitly adhered to by the late Marshal Bugeaud in the planning of any military expedition whose success was likely to be any way dependent on weather:

"Primus, secundus, tertius, nullus.
Quartus, aliquis,
Quintus, sextus, qualis;
Tota Luna talis."

3dly. A more ambitious form of lunar prediction was that of the late eminent meteorologist (for such, this one crotchet excepted, he certainly was), Luke Howard, who took great account of the moon's declination as influencing the *averages* of rainfall, and of the height of the barometer. Still more so was his weather-cycle of nineteen years, the period of the circulation of the nodes of the moon's orbit; in the course of which the *absolute maximum* of north declination occurs when the ascending node is in the spring equinox, and the moon 90° in advance of the node in her orbit, and that of *south* in the reversed circumstances—the intermediate situations of the node corresponding to the *absolute minima* of each. These situations, according to the declination theory, ought to bring round a periodical

increase and diminution in the average rainfalls and barometric heights. Like the others, however, when compared on any extended scale with recorded facts, this results in no establishment of any positive conclusion.

The causes by which that "various and mutable thing" which we call THE WEATHER is produced are in themselves few and simple enough; but the physical laws which determine their actions are numerous and complex, and the results, in consequence, so mutually interwoven, and the momentary conditions of their action so dependent on the state of things induced by their previous agency, that it is no wonder it should be next to impossible to trace each specific cause (acting as it has done through all past time) direct to its present effect. Yet from this very complexity results that sort of regulated casualty—that apparently accidental, yet limited departure and excursion on either side from a monotonous medium—that exceeding variety of climate, which renders our globe a fit habitation for such innumerable diversities of incompatible life—and that general equilibrium in each which secures to every species, and to each individual of them all, its due share in the distribution of heat, moisture, and wholesome air—considerations, these, which are not lost on those who believe that they can trace in nature the operation of motive and design as distinct from a mere necessity arising out of the nature of things and the conservation of *vis viva*.

Let us take our globe as we find it—revolving on its axis in twenty-four hours, and carried round the sun in an orbit oblique to its equator in a year, which is divided into two somewhat unequal halves (if such an expression may be pardoned) from equinox to equinox by its unequal angular motion in a slightly elliptic orbit, and thus giving rise to unequal summers and winters in the two hemispheres—its surface very unequally divided between land and sea—the land mainly congregated upon one half of it, and that half principally belonging to the northern hemisphere, and so distributed as effectually to bar all free circulation of the ocean in the direction of the diurnal rotation (or round the equator), and allow but a restricted one in that at right angles to it (or across the poles), thus compelling whatever circulation does exist, to take place

within three great basins or semi-land-locked areas, and a vast southern expanse into which all the three open, and within each of which a system of circulation is kept up by the action of the winds; its course being determined partly by the sinuosities of their shores, partly by the inequalities of their bottoms, and partly by the rotation of the earth itself.

We have, besides, to consider the globe as entirely and deeply covered by an atmosphere of mixed gases—highly elastic, very dilatable by heat, and of extreme mobility: expanding itself in virtue of its elasticity out into space, far above the tops of the highest mountains; yet, in virtue of its compressibility, so condensed (comparatively) in its lower strata as that one third of its total ponderable mass lies within a mile of altitude above the sea-level—nearly one half within two, and nearly two thirds within five miles; within which latter limit the whole would be contained, were it every where of the same density as on the surface: so that only about one third of its total mass is free to range, unimpeded by the crests of the highest Himalaya; and not much more than two fifths can entirely clear the range of the Andes without a pressure *à tergo*. In consequence, when driven in the state of WIND over these or other mountain ranges, it is thrown up into vast ripples or waves, which are propagated thenceforward onwards over indefinite areas of land or sea, and become, no doubt, the origin of a great part of those casual fluctuations of the barometer which give so much trouble to meteorologists.

This aerial ocean is not of the same temperature throughout, even in the same climate and over the same tract of country. It is every where warmer near the ground, colder aloft: and at very great heights a most intense cold always prevails, more intense than that of our severest winters. Hence the snow which covers the summits of lofty mountains even in the hottest climates. This relation between the temperatures existing below and aloft is not subverted by any amount of mutual admixture of the strata, such as internal movements or ascending currents would produce. On the contrary, paradoxical as it may appear, such ascensional movements are the primary cause of this state of things, in consequence of the habitudes of air with respect to heat when compressed or expanded, according

to a mode of action well understood by meteorologists, which we need not stop here to explain, as the reader will readily collect it for himself from what follows.

As the air aloft is colder than below, so also is it *drier*. Every one considers that he knows the distinction between damp and dry air; but many are not aware that all air contains *some* moisture, in the form of transparent invisible vapor; or that in summer and winter on two days, both which would, in common parlance, be pronounced dry ones, there is more than twice as much moisture present in an equal bulk of air in the summer, as in the winter day. In this state of invisible vapor which water is always assuming (throwing itself off in that form from its surface whenever exposed, and the more copiously the warmer it is), the air is its general recipient and distributor. The mechanism by which it is enabled to do so on the great scale is exceedingly curious. We shall endeavor to exhibit it, as it were in action—not so much with a view to affording a *coup-d'œil* of the whole of meteorology, as with that of rendering in some degree more intelligible than at present it seems to be, that great phenomenon of the November storms, with the mention of which we began this article, which has never been satisfactorily explained.

Looking at our globe as revolving under the warming influence of the sun, whose rays at noon fall on it with little obliquity in tropical regions, while their incidence on those near the poles is always very oblique, and during the half of each year null, it is obvious that its surface must be very unequally warmed. The cook, to use a homely illustration, knows full well that, however good her fire, the two ends of her joint will be under-roasted when the middle is done brown, unless she apply a couple of concave reflectors on her spit to throw some of the lateral heat upon them. As a matter of fact, no one needs to be told that it is so, and that the intertropical regions of the globe are very hot, and the polar, habitually very cold. The average annual temperature at the equator is about 84° Fahr., while in the colder regions near the North Pole it is as low as 5° Fahr., or 27° below freezing. The difference would be much greater were there no sea, or even were the whole surface initially moist soil. Whatever that initial moisture, it would soon *dry off* from the warmer portions, to settle

down in snow or hoar frost on the colder, after which the dried portions would grow hotter and hotter. Every one knows what a cooling power there is in the evaporation of water. So long as a vestige of moisture were present, the temperature of the soil could never, at all events, exceed, however it might fall short of, that of boiling water; but when once completely dried off, there would no longer be a limit to the possible increase of temperature, since there would then be no circulation or return of moisture to the part once dried. How this circulation is kept up under the existing circumstances is what we must now explain, and first of all how it happens that in the course of ages the whole ocean has *not* been transferred by this sort of distillatory process from the tropics to the poles, leaving the former dry, and piling the latter with mountainous accumulations of ice. Were the polar regions of the globe occupied by land instead of by sea, there is every reason to believe that such *would* be the case. As it is, the contrary arrangement prevails, and the polar snows fall upon these seas or upon their frozen surfaces, and form floating masses of ice, which are partly broken up and drifted away and partly melted *in situ* by currents of water perpetually streaming in against and beneath them from warmer regions, and thus become restored to the general ocean.

But what, it will be asked of course, produces these warm currents? And *how* is the water of which that snow consists, and all the rain which falls and feeds the rivers that restore it to the sea, raised into the air, and distributed over the world, and thrown down again indiscriminately over all its surface? Common sense assures us that all the rain, etc., which falls from the skies must have originated in the sea, and must (if the present state of things is to endure) find its way back to it. But how is it done? And, in the first place, where are we to look for the motive power? To this the answer presents itself at once. In the sun's heat. Any of our readers who will take the trouble to refer to our article on the SUN (in our number for May, 1863), will find that the amount of solar heat which actually reaches the surface of our globe would suffice to melt an inch in thickness of ice in two hours thirteen minutes on a surface perpendicularly ex-

posed to it, and from this he will have no difficulty in calculating the depth of water over the whole area of the globe, land and sea, *per annum*, which it would suffice to convert into vapor, if wholly expended in so doing. This he will find to amount, as nearly as may be, to nine feet.* Meteorologists, collecting the registers of "rainfall" in all regions of the globe, and comparing and calculating on their indications, have come to the conclusion that, taking one region with another, the quantity of water actually precipitated from the air *per annum*, in the forms of rain, hail, snow, and dew, would suffice to cover the whole of its surface to a depth of five feet. Remains the *equivalent* of four feet, expended in warming the soil, which is partly *radiated* away, and partly communicated to the air, thus going to maintain the average temperature, *according to its climatic distribution*. And as solely expended on this last mentioned object, we have to reckon fully one third of the sun's total radiation, or one half of that already accounted for, which is absorbed by the air before reaching the earth. The joint effect of these two portions is, as we have seen, to maintain the air in the equatorial region of the earth habitually hotter by about 80° Fahr. on an average of all seasons and hours, than the polar.

Hot air under equal barometric pressure is lighter than cold. The equatorial portion of the atmosphere, then, in comparison with the polar, is dilated upwards, the only direction in which the lateral pressure it experiences will permit it to dilate. Hence the external form of the atmosphere, and of each of its upper strata, instead of conforming in exact parallelism to the spherical form of the globe on which it reposes, as the laws of equilibrium would require, are unduly elevated, and bulged out equatorially into elliptic forms, a state of things inconsistent with

* We will make the calculation for him. An inch of ice melted in two hours thirteen minutes over a great circle of the globe perpendicularly exposed to the sun, corresponds to a quarter of an inch in that time over the whole surface (which is four great circles), or, *per annum*, to 987.75 inches; or to nine tenths of this, or 890 inches of water raised 135° Fahr. in temperature; or (taking the initial temperature of the water evaporated on an average at 60° Fahr.) to 108 inches or 9 feet heated 1112° to convert it into steam.

† We neglect the spheroidal form of the earth, which in meteorology is never worth considering.

repose. The prominent portion rests, in fact, either way, on a slope, and being unsupported laterally, *flows down* on either side—that is, from the equator towards the poles. In so doing, however, it deserts its place, and ceases to contribute by its weight to the total pressure on the equatorial region, while at the same time it goes to add to the weight incumbent on the polar. Thus the hydrostatic equilibrium of pressure is subverted, and air is pressed inwards towards the equator from the poles below, to make good the efflux aloft. A circulation is established in each hemisphere by inferior currents of air running in on both sides towards the equator and superior ones setting outwards, all around the globe, from the equator toward the poles. Both these, were the earth at rest, would follow the directions of meridians, but are converted by its rotation on its axis and the gradual diminution of the rotatory velocity in advancing from the equator to the poles, into relatively oblique currents, the upper or outward following precisely the reverse direction to the lower or inward, and being drawn downwards, and ultimately brought down to the sea-level in their approach toward the poles to supply the void which would otherwise be left by the withdrawal of air below.* They thus become surface winds, prevalent in the regions beyond the tropics from about 30° of latitude either way.

By the action of the trade-winds which occupy the intertropical region, and a little more, and which, though differing as to north and south, conspire in their general easterly character, the surface of the equatorial ocean is driven westward, and directed full against the two great barriers (the west coasts of America and Asia), and divided northward and southward in streams or currents which in their progress, after issuing from tropical latitudes, receive a direction, by reason of the rotation of the earth, corresponding to that of the anti-trade winds. These also beginning about the same latitudes to descend to the sea-level and strike on

the ocean, aid their further progress and carry them, or portions of them, far northward and southward into the polar seas, there to perform the work above assigned to them of melting the ice, and so keeping up the total amount of the ocean-water, besides mitigating, to a great extent, the severity of the cold on the coasts in high latitudes on which they strike, of which we have a familiar example in the warming influence of the celebrated Gulf Stream.

The steady and equalized agency by which the great system of the permanent winds and oceanic currents is kept up, which we have just described, contrasts itself strongly with the violent and, as it may almost in comparison be called, impulsive action of the sun on and around the point of the globe over which, for the moment, it happens to be vertical; and which corresponds to that portion of the solar energy which is directly employed in producing evaporation. The nature of this process we have now to explain.

When water is converted into invisible vapor, it occupies between sixteen and seventeen hundred times its original volume, and becomes much lighter than air—as light, indeed, as the ordinary coal-gas with which balloons are filled, so that if enclosed in a similar envelop it would rise in the air like a balloon. Being free, however, it mixes with the air, and *that* not merely by a simple chance-medley confusion, but by a peculiar self-diffusive energy arising from its inherent elasticity, by which the particles of every one species of gas or vapor struggle to interpenetrate and needle, as it were, their way among those of every other which oppose to them no *elastic pressure*, but that simple resistance to jostling which an inert body of any other kind might do—which feathers, for instance, might oppose to air, introduced and struggling to diffuse itself among them. Of course they will be pushed from their places in the struggle, both laterally and vertically, and thus arises over the whole region in which the vapor is in course of production, a pressure on the air both outwards and upwards. The former, however, cannot be effective in removing air bodily to any great distance horizontally; for the simple reason, that to do so it would have to *shove aside* the whole surrounding aerial atmosphere, and to crowd it upon that which is be-

* Those of our readers who are not already familiar with the nature of this transformation, and who would wish to follow it out more closely, are referred (as well as for every other matter of detail in similar cases, precluded by our limits) to the article Meteorology in the *Encyclopædia Britannica*, or to the same article published separately by the editors of that work.

yond: while there is room in a vertical direction for an indefinite removal, and the upward pressure is also aided by the lightness of the up-struggling vapor, which therefore rises rapidly—*not without dragging up with it a great deal of air*. The consequence is to establish, immediately under the sun, at whatever part of the globe it happens to be vertical, and at which there is a supply of moisture, and for a very large space around it, what may be likened to a vast up-springing fountain of air and vapor throwing itself up with an impetus, breaking up and bulging outwards the immediately incumbent aerial strata very far above their natural levels, and introducing at the same time into the air a great quantity of vapor, as well as withdrawing, *by direct transfer*, from the lower atmosphere, a great deal of air, which of course has to be supplied by in-draft along the surface of the earth.

The process now described is in a great many of its features similar to that gentler one previously stated, and as it always takes place at some point or other of the intertropical region, it conspires with and locally exaggerates its result so far as the transfer and circulation of air and the production of winds is concerned. As regards the vapor, a large portion is very speedily deprived of its elasticity and ascensional power, and reduced to the state of visible cloud, collecting and descending in rain. This is a consequence partly of its arrival in a colder region, but mainly of the property which all gases and all vapors alike possess, of absorbing and rendering latent a large quantity of heat as they expand in volume, and so becoming, *ipso facto*, colder. Both the air and the vapor *do so* expand as they rise, by reason of the diminution of pressure they experience. The air, indeed, retains its elastic state *as air*, however cold it may become, and therefore merely takes its place in its new situation *as very cold air*, without further tendency to rise. But the vapor so chilled loses its vaporous state, and condenses in the manner above stated, leaving only so much uncondensed *as can remain vaporous under that temperature and pressure*. This is the origin of those continual and violent tropical rains which always accompany the vertical sun, and its near neighborhood, and of which we feel the influence, though slightly, in our wet Julys. The vapor

being thus arrested in its upward progress, the whole of the evaporatory process we have just described, however tumultuous in its origin, is confined to what may be considered comparatively the lower strata of the atmosphere. But these become in this manner saturated with moisture, and when carried into the general circulation, convey it either as cloud or as invisible vapor to the farthest regions of the earth.

Besides the evaporation produced by the direct action of the sun, a vast amount of moisture is taken up by the air immediately from the sea and land over which it passes in its in-draft toward the equator as a trade-wind. Coming from a colder region to a warmer, and acquiring heat as it advances, its capacity for receiving and retaining moisture in an invisible state is continually increasing, and hence, even during the absence of the sun in the night hours, it is constantly absorbing moisture, which it carries along with it, and delivers, as a contribution of its own collecting, into the general ascending mass, to be handed over in the returning upper current into the circulation. Hence it arises that the regions of the earth habitually swept by the trade-winds abound in sandy deserts and arid wastes. When, however, in the progress of that circulation, it descends again to the earth, and becomes a surface-wind (assuming the character of an "anti-trade"), it finds itself in precisely reversed circumstances. It is now traveling from a warmer to a colder region. Saturated with moisture in the warmer, and parting with the heat which alone enabled it to retain it, its vapor condenses. Clouds already formed thicken, and descend in rain, and fresh ones are continually forming, to fall in snow at a further stage of its progress, till all the superfluous moisture is thus successfully drained off, and it is prepared to re-assume, while starting on a fresh circuit, the character of a drying wind.

We have here the origin of that generally observed difference of character between our two most prevalent winds—the S.W. and the N.E. The former is our "anti-trade," that which from our geographical position we are chiefly entitled to expect, and which, in point of fact, is of far the most frequent occurrence. Its prevailing characters are warmth, moisture, cloud, and rain, as well

as persistence and strength. In the former of these characters it is strongly reinforced by the circumstance of its accompanying across the Atlantic the Gulf Stream, which, in fact, it helps to drift upon our western coasts, and which, retaining a considerable amount of the equatorial heat, sends up along its whole course a copious supply of vapor, in addition to that with which the air above it is already loaded; and this it is which gives to our west coasts, and to that of Ireland, their moist and rainy climate—double, and more than double, the amount of rain falling annually on the coasts exposed to its full influence, as compared with the eastern coast, which it does not reach until drained of its excess of humidity.

The characters of our northeast winds (for such as are in common parlance called easterly winds are almost always such) are the reverse of these in every particular. They are cold, dry, and hence often spoken of as *cutting*, from their parching effect on the skin, and, as a natural consequence, for the most part accompanied with a clear sky. They are seldom of very long continuance, and may be regarded rather as casual winds, except in the spring, when the advance of the sun to the north of the equator begins to call into action a northern in-draft—to push to the northward the limit of the northeast trades, and to *unsettle by its intrusion the line of demarcation between the wind-zones which its long continuance in extreme south latitude, near the winter solstice, had allowed to take up, and rest in, its extreme southernmost position.* To this opposition of characters we may add, that the southwest wind is generally accompanied with lower, and that of the northeast with a higher than average barometric pressure; a connection partially, but not entirely, accounted for by the lightness of warm and moist air as compared with cold and dry, and which is the origin of those indications of the weather (*fair, settled fair, rain, much rain, etc., etc.*), which we find inscribed opposite to the divisions of the scale of inches in our ordinary barometers. When the northeast wind brings snow, as it very frequently does, it is not by the precipitation of its own moisture, but by its intrusion as a cold wind into a warmer atmosphere charged with moisture, and ready to deposit it under any cooling influence.

Complementary to the phenomenon just

mentioned of a tendency to northeasterly wind in the spring, that is, to the production of a lull or temporary intermittence in the regular southwest current, and the substitution for it of its opposite, may be considered that aggravation of its intensity which takes place subsequent to the autumnal equinox, exaggerated, however, and thrown later into the season, namely, into November, by the conspiring action of several distinct causes, which we will now proceed to explain.

As the sun in its annual course traverses the northern and southern halves of the ecliptic, it creates summer in the one hemisphere, simultaneously with winter in the other, and the balance of aerial expansion and aqueous evaporation is alternately struck in favor of each. As a necessary consequence, a large amount both of air and of aqueous vapor carrying air along with it, is alternately driven over from one hemisphere to the other. The only course which the elements so transferred can pursue, is by passing in the higher regions of the atmosphere across that medial line where the two superior out-flowing currents separate on their courses towards either pole—in other words, by joining with, and reinforcing the “anti-trade” current on that side of the equator *toward* which they are propelled. Now this cause of reinforcement can not begin to be felt until the sun, having passed the equinoctial, has advanced considerably toward the other solstice. In the case of the northern anti-trade, the effect in question is rendered still more sensible by the great preponderance of sea in the southern hemisphere as compared with the northern, and the much greater quantity of vapor raised by the summer sun on that side of the equator. And besides all this, it will be remembered that all the *air* which had been dragged across the equator into the southern hemisphere by transferred vapor during the continuance of our northern summer, and there as it were imprisoned, is now released, and returns, necessarily by the same course, and contributes to reinforce the northern anti-trades.

In the view we have taken of the production of the trades, the immediate verticality of the sun acts as a disturbing force. In its passage from solstice to solstice it causes an annual fluctuation or oscillation to and fro of this medial line, and of the northern and southern limits of

the wind-zones, which, when those limits cross the ocean, is but of moderate amount, because the medium temperature of the intertropical seas varies but little with the seasons. But when they cross extensive tracts of land, their oscillations to and fro may become very considerable, owing to the high temperature which the land is capable of acquiring. Now in this case, so soon as the autumnal equinox is passed, the vertical sun enters on the full breadth of this vast continental tract, and commences throwing up torrents of vapor and intensely heated air, the latter being far in excess of what it would be over an equal area of sea; while at the same time, owing to the sun's then rapid motion in declination, the limits of the wind-zones retreat southward, and their regularity is disturbed and broken, which can not but give rise to great temporary confusion and disturbances in the winds themselves. As to the "atmospheric wave" which recurs periodically at this season, it results most probably from the operation of the more general of the causes above mentioned, by which a large amount of extraneous air and vapor is thrown into the atmosphere of the *North Pacific*, causing the southwest wind of that ocean to sweep with increased force up the western slope of that vast range of lofty mountains which fringes the North American continent, and to be thrown up along the whole length of that range into a broad swell, propagated onwards as a wave across America and the North Atlantic into Europe. No merely local action, and no casual conjunction of circumstances, can be considered competent to produce so extensive and so regularly recurring an effect. A mere inspection of Admiral Fitzroy's interesting compendium of the state of the barometer, etc., etc., over the area occupied by our island and the neighboring continental coasts, as recorded from day to day in the *Times*, will suffice to satisfy any one of its occurrence in former years, and to show that its character has been (so far at least, November 21) fully maintained in the present.

If we are ever to make any material progress in the prediction of the weather beyond "forecasts" of a few hours, or it may be a whole day in advance, it can only be by the continued study of such of its phases as recur periodically, or of such as manifest a *periodicity of event*, as dis-

tinct from that of times and seasons, with a view to connecting them with their efficient physical causes. Of this latter description we have an example of one, and of its successful reduction under the domain of philosophical reasoning, in the law of the rotation of the winds. That the winds in their changes, in a general way, "follow the sun," that is, have a tendency to veer in the same direction round the compass card with the sun's apparent diurnal course in the heavens (from east round by south, west and north, in the northern hemisphere, and reversely in the southern), in continual succession back to the original point—has been surmised from very early times, but until lately, rather as a matter of occasional remark, agreeing on the whole with the general impressions of casual observers, than as a meteorological law of universal applicability. As such, however, it has now taken its place among ascertained facts, verified by the registered movements of the wind-vane at every station where continuous observation is made, and connected by the researches of M. Dove with that great fact which underlies so many other phenomena—the rotation of the earth on its axis.* Nothing apparently can be more capricious than the shifting and veering of a weather-cock on a gusty day, and to any one who watches its leaps to and fro for a few hours, it may well be a matter of surprise to be told that with anything like a fair exposure, the preponderance of its movement is sure to be in one direction—if not in a week or two, at all events on the long average, and in a great majority of cases before the expiration of a month. Thus it appears from the record kept at the observatory at Greenwich, in which every change of the wind's direction is noted by a piece of mechanism attached to the vane, and traced on a table by a pencil—that in the thirteen years elapsed from the beginning of 1849 to the end of 1861, the vane made 166 complete revolutions more in the direction above indicated than in the opposite, on a comparison of the sums of all its angular movements either way—or, on an average, nearly thirteen revolutions

* For the reasoning by which this connection is made, and for the mode in which any casual advance and retreat of a body of air over an extensive but limited tract of country is transformed by this cause into a relative gyration, the reader is referred to the works already cited in a former note.

per annum. In all this interval, two years only, 1853 and 1860, gave a contrary result, and that only to the total amount of two revolutions in excess the wrong way in each. And of these the year 1860 was in many points an abnormal one in respect of stormy weather. Nothing can convey a better idea of the disappointment to which all meteorological predictions, even though founded on just principles, and supported by extensive inductions, are liable, than this example. Still there remains a decided *balance of probabilities* in favor of a change of wind occurring in this rather than in a contrary direction on any specified occasion. A continuous circuit round the horizon in the contrary direction would certainly be in a high degree improbable.

Is it in any degree within the power of man to *alter* the weather? A strange question, it may seem at first sight to propose! but by no means so absurd a one as it may appear. The total amount of annual rainfall over any district, is an element of its weather and its climate of the last importance; and when we look over the registers of rainfalls which are now so assiduously kept in almost every part of England and other civilized countries, it is impossible not to be struck by the very great local diversity, even in neighboring places, whose general similarity of situation as regards wind-exposure and surface *configuration* would seem to preclude any material difference on an average of years in their reception of rain, if really indifferent in its *choice where to fall*. There is evidently something distinct from mere local *situation* which determines this element of climate; and we must look for it in the nature of the surface of the districts, and its relations to heat and moisture—relations which the operations of man on the soil itself, and his selection of the kind of vegetation with which it shall be habitually clothed, place to a great extent within his power. It is chiefly in his clearance or allowance of arborescent vegetation, and in his artificial drainage of the soil over extensive districts for agricultural purposes, that his influence on these relations is perceptible. The total rainfall and, which is perhaps as regards weather and climate of even more importance, the *frequency* of showers on an extensive well-wooded tract, or one entirely covered by forests, ought, on every theoretical view of the

causes which determine rain, to be greater than on the same tract denuded of trees. The foilage of trees defends the soil beneath and around them from the sun's direct rays, and disperses their heat in the air, to be carried away by winds, and thus prevents the ground from becoming heated in the summer; while on the other hand, a heated surface soil reacts by its radiation on the clouds as they pass over it, and thus prevents many a refreshing shower, which they would otherwise deposit, or disperses them altogether. So again of drainage: by carrying away rapidly the surface water down to the rivulet, and so hurrying it away to the ocean, it not only cuts off a great deal of the supply of local evaporation, which is a material element in the amount of rainfall, but by causing the surface to dry more rapidly under the sun's influence, it allows it also to become more heated, and so to conspire with the action of the denudation of trees to prevent rain. Evidence is not wanting to corroborate this *a priori* view of the matter. The rainfall over large regions of North America is said to be gradually diminishing, and the climate otherwise altering, in consequence of the clearance of the forests; while, on the other hand, under the beneficent influence of a largely increased cultivation of the palm in Egypt, rain is annually becoming more frequent. Lakes are cited in what was formerly Spanish America (that of Nicaragua, if we mistake not, is one), whose water supply (derived of course from atmospheric sources) had been so largely diminished, owing to the denudation of the country under the Spanish regime, as to contract their area and leave large tracts of their shores dry; which, now that the vegetation is again restored, are once more covered by their waters. Even in our own southern counties complaints are beginning to be heard of a diminution of water supply, partly, it is said, owing to gradually decreasing rainfall from the universal clearance of timber, though chiefly perhaps attributable to robbing the springs of their supply by draining—a practice beneficial no doubt to agriculture, if used with caution and in moderation, but of which the consequences, if carried to excess, may ere long be very severely felt, in rendering large tracts of country uninhabitable in summer from mere want of water.

To return to our prognostics. We

would strongly recommend any of our readers whose occupations lead them to attend to the "signs of the weather," and who, from hearing a particular weather adage often repeated, and from noticing themselves a few remarkable instances of its verification, have "begun to put faith in it," to commence keeping a note-book, and to set down without bias all the instances which occur to them of the recognized antecedent, and the occurrence or non-occurrence of the expected consequent, not omitting also to set down the cases in which it is left undecided; and after so collecting a considerable number of instances (not less than a hundred), proceed to form his judgment on a fair comparison of the favorable, the unfavorable, and the undecided cases: remembering always that the *absence of a majority one way or the other would be in itself an improbability*, and that, therefore, to have any weight, the majority should be a very decided one, and *that* not only in itself, but in reference to the neutral instances. We are all involuntarily much more strongly impressed by the fulfillment than by the failure of a prediction, and it

is only when thus placing ourselves face to face with fact and experience, that we can fully divest ourselves of this bias. Any one before whose eyes these pages may pass, for instance, who may feel disposed to give our *dictum* respecting the clearance of the sky under the influence of the full moon (we will not say through a hundred lunations, but throughout the year 1864) a fair trial of the kind, should record the state of the sky as to cloud on three successive nights of each lunation—that on which the full moon occurs, and those immediately preceding and succeeding it, from an hour before the rise of the moon, and thence hourly to as late an hour in the night as his usual habits will allow—noting the strength and direction of the wind, and accompanying his memoranda in every instance with a note of the day and hour at which the observation it refers to was made. We should be very glad to enlarge our own experience by the obliging communication of such memoranda.*

* These may be addressed to the writer at Good Words office, 32 Ludgate Hill, London, E. C.

From Bently's Miscellany.

CHARTERHOUSE AND ITS FOUNDER.

ABOUT the year 1361, in the era of feudal castles and foreign wars, when monastic zeal and ecclesiastical splendor were at their height, the monastery of the Carthusians was founded upon the site now occupied by the more famous Charterhouse—a spot which has been truly described as being at this day a fortified position in the heart of London, inclosing gardens and cloisters sacred from the tumult of the city, and almost as quiet now as they were five centuries ago when they were solemnly dedicated for the Carthusian monks, the memory of whose parent house of *Chartreuse* still lingers, though corrupted, in the modern name.

Some years after the dissolution of this rich monastery, it became the palace of

that popular and powerful but ill-fated nobleman, Thomas, fourth Duke of Norfolk, and from him acquired the name of Howard House. The *manes* of the prior who was slaughtered by Henry VIII., and of the dispossessed fraternity, had been avenged by the death upon the scaffold of the lay-grantees—two nobles of the highest rank and power, who had acquired the monastery from the crown—when the wealthy London merchant, Thomas Sutton, whose memory is dear to all Carthusians, came hither to dedicate those lands anew to religion, charity, and learning. The duke's second son, Thomas Howard, afterwards Earl of Suffolk, (founder of Audley End,) to whom the Charterhouse property was granted by

Queen Elizabeth, the murderer of his noble father, was living there when James I. entered London; and he, in 1611, sold it to Thomas Sutton, who thereupon constituted and endowed what is styled "the Hospital of King James in Charterhouse."

The founder's history is sufficiently well known, yet the following brief outline of a very remarkable life may be acceptable to the reader. Thomas Sutton, who was a descendant of the old Lincolnshire family of Sutton, was born in that county in 1532. He was educated at Eton, and afterwards at Cambridge, but he went abroad soon after the accession of Queen Mary, and did not return until he was thirty years of age, when, by the death of his father, he had become the successor to considerable property. His character and acquirements obtained for him the confidence and regard of more than one great nobleman, and he acted as secretary to the Earl of Warwick and to his brother the Earl of Leicester. By the former, as Warden-General, he was appointed Master of Ordnance at Berwick-upon-Tweed, in which capacity he took part against the northern earls on the rising in 1569. He was subsequently much employed in military affairs; but in 1582, at the sober age of fifty, we find him residing in London, and greatly augmenting his fortune by marrying Elizabeth, daughter of John Gardiner, Esq., a Buckinghamshire gentleman, and widow of John Dudley, of Stoke Newington, a scion of his noble patron's family, and whose manorial mansion at that suburban place Sutton thenceforth made his country house. He not only ventured into matrimony but into mercantile speculations, and he used his commercial influence abroad for the advantage of England. Besides being one of the victuallers of the navy, he was an owner of ships; he sent his barque, the Sutton, to attend the English fleet against the Armada, and he is said to have himself gone to sea with letters of marque, and to have made prize of a Spanish ship worth £20,000.

After the death of his wife (who left him childless) he began to retire from worldly affairs, and to devote his thoughts to the disposal of his great property for charitable uses, and he was heard to pray that his heart might be inclined to dedicate his riches for God's glory. He seems to have been at this time the richest untitled subject in the realm. Besides his

personal property, which at the time of his death was estimated at £60,000—an enormous amount in the money of those days—he was the owner of goodly estates in his native county of Lincoln, and in Cambridgeshire, Essex, Wilts, and Middlesex, and his landed property appears to have yielded £5000 a year. His wealth had been augmented by a fortunate speculation in coal mining, which was in Elizabeth's reign a comparatively new branch of industry on the Tyne. The Bishop of Durham, as lord of the manor, had granted a lease of the manors and royalties of Gateshead and Whickham, which Queen Elizabeth had transferred to the favorite, Leicester, who assigned the property to Sutton; and he, some time afterwards, sold it to the mayor and burgesses of the adjacent town of Newcastle for £12,000—a sum only a thousand pounds less than the purchase money he paid shortly afterwards for the old monastic buildings and lands of the suppressed Carthusian monks.

In the year 1609, when he had been for seven years a widower, he had resolved to found, at Hollingbury, in Essex, a college which should be at once a hospital for decayed gentlemen and a free grammar-school; but the house and lands of the Carthusians being (as Howel says in his *Londinopolis*) "sweetly situated, with accommodations of spacious walks, orchards, and gardens, with sundry dependencies of lands and tenements thereunto belonging, they gave occasion to that worthy and well-disposed gentleman to alter his resolution;" and accordingly, in 1611—only a few months before his death—he bought this old historic house for the site of his intended college. He endowed it so munificently with his estates in land that the yearly income of the foundation at this day may be stated in round numbers at £25,000, and every year increases the value of some part of the property. With his care for his new foundation, a house which was a few years ago somewhat famous as a place of popular resort for Londoners is associated, for, on rising land to the north of London, then occupied by rural fields, he constructed a conduit for the use of the Charterhouse, which stood near the antique low-roofed building that became known as White Conduit House. The buildings of the monastery had been greatly altered in the Duke of Norfolk's time, but some

portions of the ancient walls are still standing, and the stately "Great Chamber," now used as the governors' room, is a relic of the Duke of Norfolk's splendor.

It was only a few days before his death that Thomas Sutton completed the foundation and endowment of his hospital and made his will; and having thus been spared to perform the noble deed which has made his name illustrious, (Bacon's attempt to defeat his intentions having, happily, been futile,) he died in peace and honor at the age of seventy-nine, on the 12th of December, 1611. On that day—as all Carthusians and the distinguished visitors who have the privilege to be their guests well know—the commemoration of the founder is annually kept "with solemn service, sermon, and increase of commons." The good cheer consumed at the feast of "Founder's Day," Elizabethan as it is in character, bears, however, no proportion to the hecatomb of poultry consumed by the mourners assembled at his funeral, when, before starting, they drank a hog's-head of claret, sixteen gallons of Canary, twelve gallons of white wine, ten gallons of Rhenish wine, six gallons of hippocras, and six barrels of beer; and at the dinner afterwards in Stationers' Hall, consumed, besides a still larger allowance of liquors, ten turbot, twenty-four lobsters, forty stones of beef, forty-eight capons, thirty-two geese, forty-eight chickens, thirty-two neats' tongues, forty-eight turkey-poults, seventy-two pigeons, forty-eight ducklings, and thirty-six quails, with such trifles as oysters and pastry in addition.

Within three years from the founder's death, Charterhouse received its first inmates. It was decided by the governors soon after the foundation, that, "the Poor Brothers" should not exceed the number of four score, and that only such as should be within the intention of the king's letters patent of the foundation should be held qualified, namely, "gentlemen by descent and in poverty, soldiers that have borne arms by sea or land, merchants decayed by piracy or shipwreck, or servants in household to the king's and queen's majesties." The eighty pensioners, or "Poor Brothers," who have been ever since maintained on the foundation, have been, for the most part, selected from amongst professional or mercantile men; and, although serious abuses have sometimes been committed by appointing infe-

rior persons, the governors* seem generally to have recognized the principle that Charterhouse was designed to afford to men of education, who have sustained misfortune, who have fought the battle of life honorably but without success, a home and refuge in old age, that shall not contrast bitterly with the memory of comforts lost. The brethren live together in collegiate fashion, but each is provided with separate apartments, and with the necessaries of life, and £14 a year as an allowance in lieu of apparel—a pension, however, which is not sufficient to defray the cost of some simple comforts very needful to infirmity and age, but not provided by the foundation.

There are also forty-four "Poor Scholars" on the foundation, who are nominated in the same manner as the brethren, by the governors in turn. By "Poor Scholars" are understood the sons of poor gentlemen to whom the charge of education is an object. They are taught, maintained, and clothed free of all expense, save about £20 a year, and most of them are placed out at the proper age, or sent on "exhibitions" to the universities. The exhibitions, and the placing out of scholars, averaged in the ten years to 1854, £1155 a year.†

The names of Addison, and Steele, and Barrow, of Judge Blackstone, Lord Chief Justice Ellenborough, and Havelock, are but a few of those, among departed worthies, that reflect luster on Charterhouse School, in which, as is well known, a great number of scholars other than those on the foundation are educated as at ordinary schools, both as day-scholars and as boarders in the schoolmaster's house. No event has thrown a darker shadow over the Christmas festivities of 1863 than the death of that noble, kindly-hearted author whose love for Charterhouse—the place of his education—and whose many refer-

* The governors (arranged in the order in which they nominate) now are, her Majesty, the Prince of Wales, Archdeacon Hale (Master of the Charterhouse), the Earl Howe, the Duke of Buccleuch and Queensbury, the Earl Russell, the Earl of Dalhousie, the Earl of Derby, the Lord Cranworth, the Earl of Harrowby, the Bishop of London, Lord Justice Turner, the Earl of Romney, the Archbishop of Canterbury, Viscount Palmerston, the Earl of Devon, the Archbishop of York, and Lord Chelmsford.

† The expenses of the establishment in the year ending March, 1854, exceeded £17,000, and that sum is of course exclusive of the money paid in respect of the estates and trust funds.

ences to it in his novels, will for ever associate the name of Thackeray with the traditions of the school.

Both as to the scholars and the "Poor Brothers," this great foundation continues to be governed by the statutes of 1627, save so far as they have been altered by subsequent orders, all of which are fully set out in the report made in 1854 by an inspector of the Charity Commission, and subsequently laid before parliament.

It is hardly necessary to remark in conclusion, that Charterhouse is no ordinary charitable foundation, and is not a mere

hospital, nor an almshouse, nor a free grammar-school, but justly ranks with the great collegiate and other public foundations of this country. When one looks at the portrait of the worthy founder which decorates the great hall, or at the monumental effigy in beard and gown which commemorates him in the chapel, he seems still saying through all time:

Here seek, ye young, the anchor of your mind,
Here, suffering age, a blessed provision find!

W. S. G.

From the London Quarterly.

THE DANISH DUCHIES.

IN the diplomatic parlance of the day, the monarchy of Denmark consists of a kingdom and of three duchies. The kingdom is made up of the islands and of the northern portion of the Cimbric peninsula, called Jutland. The central portion of that peninsula is the Duchy of Slesvig; the southern portion of it is the Duchy of Holstein. On the southeastern frontier of Holstein lies the little Duchy of Lauenburg. All these territories belong equally to the Danish crown. But they are held on very different titles. Jutland and the islands have always formed part of Denmark proper; Slesvig has been from the most ancient times either united to Denmark, or a fief held under the King of Denmark; while Holstein and Lauenburg have always been fiefs of the Holy Roman

Empire. Thus the boundary between Slesvig and Holstein, which is formed by the river Eyder, was also the boundary between the feudal jurisdictions of the German emperor and the Danish king. In the course of the centuries during which the modern map of Europe was in process of formation, these two territories, like many others in their neighborhood, underwent numerous political and territorial changes. Only at distant intervals, and at brief periods, were they governed in their entirety, as they are now, by the King of Denmark. Their more usual condition was, that they were split up into various divisions, under various rulers. The distribution which prevailed in the main in more recent times, that is to say, during the sixteenth and seventeenth centuries, was that the King of Denmark took one bit of each of the two duchies; the Duke of Holstein-Gottorp took another; and the ducal family of Sonderborg had a small remnant out of each duchy to divide among themselves. In course of time these subdivisions came to an end. Throughout the whole of Europe, the ambition of rulers, and the common sense of their subjects, have tended to consolidate into large masses the minute political atoms into which the various territories had been split up under the feudal system. In Denmark this whole-

Correspondence respecting the affairs of the Duchies of Schleswig and Holstein. Presented to Parliament. London. 1860-62.

Denmark and Germany since 1815. By C. H. Gosch. London. 1861.

Urkundenbuch zur Geschichte der Holstein-Lauenburgischen Angelegenheit am Deutschen Bunde in den Jahren 1851 bis 1858. Frankfort-am-Main. 1858.

Grund-gesetz für die gemeinschaftlichen Angelegenheiten des Königreichs Dänemark und des Herzogthums Schleswig. Kopenhagen. 1863.

Debate in the Prussian Chamber. Kölnische Zeitung, Dec. 2 and 3. 1863.

A Residence in Jutland, the Danish Isles, and Copenhagen. By HORACE MARRYAT. 2 vols. London. 1860.

some tendency began to make itself visible in the middle of the seventeenth century; and during the latter half of that century the policy of the kings of Denmark was mainly directed to the object of getting back the portions of Slesvig which were held by other lines. At last, after many vicissitudes, King Frederick IV. succeeded in 1713 in occupying the Gottorp portion of Slesvig; and united it, as soon as peace was restored, under the guarantee of England, to the Danish crown.* The separated part of Holstein was not secured for another half century. However, when the Holstein-Gottorps had ascended the throne of Russia, this petty strip of territory ceased to be an engrossing object of ambition to them. In 1773, Paul, then just of age, renounced all rights of the House of Holstein-Gottorp upon any part of Slesvig; and also ceded all his possessions in Holstein to the Danish crown. The smaller shares in the two duchies belonging to other claimants were in course of time bought up. Thus in 1779 the King of Denmark became the ruler of those parts of Slesvig and of Holstein which had been granted away, and from that time they remained united to the monarchy. Holstein, however, continued to retain its feudal relation to the Emperor of Germany. It remained a fief of the Holy Roman Empire till that empire was finally broken up in 1806. Lauenburg was ceded to the monarchy under a totally different title. When peace came after the Great War, and those who had languished long under the oppression of Napoleon came together to re-distribute the spoils they had won back from him, it was not likely that Denmark, who had joined him, would meet with much mercy from his victims. They were content, however, with stripping her of Norway. By way of compensation the petty Duchy of Lauenburg, which lies upon the southeastern frontier of Holstein, was added to the Danish territory. At the same time these two Duchies of Holstein and Lauenburg, as they had formed part of the old German Empire, were included in the new Germanic Confederation. In virtue of these possessions, the King of Denmark

therefore became a member of the Diet. If Denmark could have looked into the future, and have foreseen the perils that lay hidden under that seemingly formal stipulation, she would have prayed the Congress of Vienna rather to strip her of any territory than to admit her into that fatal partnership.

This settlement might have lasted without disturbance for an indefinite time, if the tempers of the various nations had remained as they were in 1815. All the arrangements of that year were negotiated upon the principle that France and Russia were the only two countries from whose aggressive spirit the peace of Europe had any thing to fear. The old traditions of Austria, and the heterogeneous character of her empire, were thought to be a sufficient security for her pacific disposition; nor can it be said that that expectation has been disappointed. Prussia and the smaller German powers had given to the minds of politicians of that date a different and a more humiliating guarantee. Their conduct during the Great War had shown so slender an aptitude for self-defense, that the idea of their attempting conquest was too absurd to be entertained. Nor had their patriotism been of that excitable kind which disposes a nation to incur risk for the sake of glory. They had allowed themselves to be tossed from one ruler to another, as the fancy of their conqueror might decide; they had submitted to see a horde of foreign officials stifling their trade in order to forward his designs, and loading them with taxes to keep up the machinery for their oppression; they had suffered their sons to be dragged into a distant land to fight his wars; and all these insults had not spurred them into any serious resistance, until bolder races had broken his power, and had made patriotism comparatively safe. The masses, in 1813, fought well: but it was only after Russia had made their task easy; and it was rather against the will than under the guidance of their natural leaders. It was pardonable, therefore, in the Vienna Plenipotentiaries, if it never occurred to them to fear that the ambition of the smaller German States would endanger the balance of power which they were adjusting. But contempt is said by the Indian proverb to pierce the shell of the tortoise; and the ignominious part which Germany played during the Great War had the effect of

* The English guarantee (July, 1720) applied to the Danish possession of the whole of Slesvig, and was couched in the strongest terms "against all and every one who may attempt to disturb it directly or indirectly."

awakening a national spirit which had never existed before. If it had been directed by moderate and practical men, this movement would have been of great service not only to Germany but to Europe. A United Germany, strong enough to resist attack, either upon her eastern or western frontier, would have been, in the opinion of the statesmen of forty years ago, the surest guarantee of European peace. No one would have ventured to predict that the ambition of a United Germany might be as dangerous to that peace as the ambition of France or Russia. Unhappily this movement for national unity did not fall into the hands of the more sober part of the community. It was closely linked with the secret propaganda of those wild democratic theories which the Revolution had left as its legacy to Europe. The democratic and the national party grew up side by side in an alliance so close that they could barely be distinguished from each other. In such companionship it was not likely that the designs of the national party would be marked by a spirit of moderation, or a respect for the rights of others. Moderation, especially in the matter of territory, has never been characteristic of democracy. Wherever it has had free play, in the ancient world or the modern, in the old hemisphere or the new, a thirst for empire, and a readiness for aggressive war, has always marked it. This tendency impressed itself deeply upon the national party in Germany. They had enough to do without meddling with their neighbors. The reconciliation of conflicting interests, which is indispensable for such a consolidation as shall make Germany strong in the face of real danger, would have taxed all their sagacity. The attainment of that constitutional liberty which is the truest foundation of a nation's strength, would have given abundant employment to their enthusiasm. But they were not satisfied with these modest objects of desire. After the fashion of many other nations during the course of the last half century, they fed their imaginations upon historical illusions. They studied the records of the past to find material for the dreams of the future. They dwelt upon the thought of what a German emperor once had been; and they sighed for a mighty German empire, based upon pure democratic principles, that should again give law to Europe.

Of course for the erection of such an empire a powerful fleet was a matter of primary necessity. For the maritime interests of a pacific Germany—such a Germany as the statesmen of the last generation pictured to themselves—a very moderate protection would suffice. Her external commerce is small; and the only enemies she has much cause to fear are enemies that would attack her by land. But for a nation claiming to exercise a powerful influence upon the affairs of the world, a maritime force is indispensable. Unfortunately in Germany the elements out of which a maritime power is made are lamentably deficient. During the most excited months of 1848, an Austrian nobleman of eminence met a number of sympathizing compatriots at a dinner at some tavern in London; and in the course of his speech he took occasion, among other things, to congratulate them upon the maritime power of their country, for, as he strikingly observed, "they had got a splendid naval force, only they had not yet got the ships." The national party have always been anxious to remedy this solitary but unfortunate deficiency. The best evidence of the importance which they attach to this point is the strange effort which has been made in recent years to collect money by private subscriptions to build a fleet for Germany. It is needless to say that this curious exhibition of patriotic zeal has not been brilliantly successful. But it has been carried out with great industry; and there have been few towns in Germany (except where the government has interfered) in which a collection has not been made in some form or other for the German fleet. As a specimen of the mode in which the canvass has been conducted, and of the strange sort of people who have been induced to join in it, we may take the case of Dr. Strauss, who has published during the present year a vigorous lecture directed against "historical" Christianity, which he recommends to his countrymen by telling them that it was delivered at Heilbronn, a small town in Wurtemberg, "to raise money for the German fleet." Nothing, of course, would be more unwarrantable than to utter a word of censure against any kind of expenditure which an independent power may think fit to make upon any kind of armament it pleases. But this peculiar zeal for a naval power indicates the objects upon which the National Verein is

bent. And it is from the National Verein that the impulse proceeds which is driving the German cabinets into war.

The truth is, that the existence of Denmark as an independent power is almost as fatal to the creation of a German marine as that capital deficiency of ships to which we have already referred. In proportion to its size, the German Confederation is singularly destitute of sea-board. What sea-board it has is ill-furnished with harbors; and what harbors it possesses are, in a great measure, commanded by the territories of other powers. Setting aside Trieste—which, under the new-born doctrine of nationalities, is not likely to remain German property very long—Germany only possesses the coast of Prussia and Mecklenburg upon the Baltic, and, besides Hamburg, the coast of Hanover and Oldenburg upon the North Sea. The Baltic harbors, such as they are, are not of much use for operations upon the open sea if Denmark should be hostile; and except Bremer-hafen, the harbors on the North Sea are commanded either by Denmark or Holland. On the other hand, if the Duchy of Slesvig and the Duchy of Holstein could be fairly got into German hands, and made subservient to German interests, the whole state of the case would be changed. The monarchy of Denmark would be practically broken up, and would become a mere dependency of Germany; and a set of admirable harbors, both upon the Baltic and the North Sea, would be placed at the disposal of the German fleet.

The bearing of German aspirations on the present dispute may, in short, be summed up thus: the national party desires, above all things, that Germany should be a great naval power; the dismemberment of Denmark is essential to that end; and we find, actually, that the national party are those who are urging on with the greatest vehemence the dismemberment of Denmark. Upon these grounds alone it would not be uncharitable to conclude that the Germans were actuated in the present dispute by very much the same motives as that which actuated Ahab in his celebrated controversy with Naboth. But this imputation, disgraceful as it is, is not matter of surprise; it has been openly admitted—or, rather, loudly proclaimed—again and again, that the grievances of the Holsteiners and the Slesvig-ers were only urged to give Germany an

excuse for evicting Denmark out of the duchies. To take but one testimony out of many, we will quote from the report of the Committee of the House of Representatives at Berlin, in 1860. "Without these duchies," say the committee, "an effectual protection of the coasts of Germany and of the North Sea is impossible; and the whole of Northern Germany remains open to a hostile attack as long as they belong to a power inimical to Germany." A more simply formulated reason for stealing your neighbor's property was never, perhaps, before printed in a state paper. The speakers in the recent debate (Dec. 1) in the Prussian Chamber, have not been less plain-spoken. A committee was appointed to consider the claims of the pretender, Prince Frederick; and the reporter of the committee, von Twetten, makes the following candid remark:

"The duchies are for Germany and Prussia a strong bulwark, under all circumstances, against any attack coming from the North. This as well as their maritime position are advantages which Prussia can never relinquish."

Dr. Löwe, who is a conspicuous man in the National Verein, speaks with even less affectation of concealment:

"What interest has Prussia in the maintenance of the London Protocol? Since the time of the great elector, Prussian policy has always been rightly directed toward gaining the North German peninsula for Germany."

The extract is curious: both as an admirable specimen of the morality current among the German patriots of the present day, and also for the calm audacity with which the new geographical designation of North German peninsula has been invented. But it hardly needed these frank confessions to enlighten us upon the subject. No one who has followed the Schleswig-Holstein controversy carefully and impartially can entertain even a momentary doubt that he is reading over again, in a more tedious form, the fable of the Wolf and the Lamb. Without such a key to the conduct of Germany, the whole correspondence is simply unintelligible. The oppression alleged, even if it be genuine, is so slight in itself—it is so insignificant in comparison to that practiced by the great German powers toward subject nationalities of their own—

the claims made are so unreasonable—the determination on the part of Germany to disintegrate the Danish monarchy is so transparent—that, unless some ambitious motive were at the bottom, the whole transaction would be one of the mysteries of history.

The desire of the German national party to obtain a hold over Slesvig first became apparent after the great political disturbances of the year 1830. During the eighteen years that intervened between the revolutionary period of 1830 and the revolutionary period of 1848, the agitation was carried on with great vigor. A new doctrine was elaborated, which is known by the name of the Schleswig-Holstein theory. According to this theory, Slesvig and Holstein “had been united for four hundred years under the king-duke, and were independent of the rule of Denmark proper.” Thus, Holstein being part of Germany, and Slesvig being indissolubly united to Holstein, it followed that Schleswig-Holstein was part of the great Fatherland. It was true that the majority of Slesvigers spoke Danish; but that was their misfortune, not their fault. They ought to be taught to revert to their native German as soon as possible; and the sooner the intrusive Danish government could be ejected by any contrivance, the better.

It is needless to dwell upon the curious character of the “indissoluble union,” which appears to have been a union all upon one side. The propounders of it argued, with great confidence, that because Holstein was German, therefore Slesvig, which was indissolubly united to it, must be German, too. It never seems to have occurred to them that the argument was capable of being turned round. If Slesvig is Danish—as, by its history and the original language of the majority of its inhabitants, it certainly is—it follows, according to the doctrine of indissoluble union, that Holstein must be Danish, too. However, the allegations upon which the theory is based are as worthless as the logic by which it is constructed. The best proof that no amount of indissoluble union has made Slesvig into a German duchy is, that from the thirteenth century it has been held according to all the formalities of the feudal law, as a Danish fief.* The lord para-

mount of Slesvig was always the King of Denmark, while the lord paramount of Holstein was the German emperor; and, accordingly, the Eyder has always—at least since the days of Conrad II.—been accepted as the northern limit of the Holy Roman Empire. It is perfectly true that there are, and have been for many centuries, a considerable number of Germans north of that river. The line which divides races asunder seldom remains as immovable as the line which divides their governments. In the lapse of centuries, the wealthier and more cultivated race gradually overstepped the border. German emigrants from Holstein came over and settled in Slesvig; and when, by the accidents of succession, dukes of German blood inherited the duchy, they brought with them representatives of powerful German families, who received grants of land. Thus it came to pass that a considerable minority of the population of Slesvig were Germans by race and blood, and as they were the wealthier class, they left the mark of their nationality upon the civil and ecclesiastical institutions of their adopted land. Under the guidance of German judges, German maxims of law crept into the old Jutish law-book. Under the rule of German bishops, German services were said, and German sermons were preached, in many a parish where only Danish or Frisian was understood by the people. Out of this political prevalence of the German minority sprang a certain amount of political connection between the two duchies. The Germans of Slesvig naturally leant upon their more powerful brethren on the other side of the Eyder, and associated themselves to Holstein as closely as they could, both in social intercourse and in certain administrative arrangements. The university of Kiel was commonly used by both duchies. In the sixteenth century the two diets even met in one place, and continued to do so until their extinction in 1711; and since 1648 the purely local affairs of the two duchies, or at least of such part of them as was in the hands of the King of Denmark, were managed by a distinct department, entirely, or almost entirely, apart from the affairs of Den-

tury, a large portion of Slesvig was occasionally held free from feudal service by the House of Gottorp—the ancestors of the Emperor of Russia. This quasi-independent sovereignty was extorted by force in 1658, and was effaced by force in 1713.

* During the latter half of the seventeenth cen-

mark proper. In 1834 a common court of appeal was given to them.

When the Germans say, therefore, that a political union has existed between Slesvig and Holstein for four centuries, the assertion scarcely contains even the smallest possible infusion of truth. There has never been anything that could be called a definitive union; though, on the other hand, there has never been an absolute, permanent, and complete separation. The occasional combination, such as it was, was fitful and desultory, and depending evidently more upon the moment's convenience than upon any definite policy. There is no trace of any customary right possessed by the duchies of forming one political whole. This is sufficiently demonstrated by the fact that it was very seldom that either of them could keep its own unity—let alone any right to be united with its neighbor. It would be endless to describe the various combinations into which they were cut and carved at various periods of their history. Sometimes they were under two princes, sometimes under three, at one time under as many as nine; sometimes they were united with the Danish crown, and sometimes they were separated from it. Sometimes one of them was united and the other was not; or bits of each were united to it, while other bits were severed from it. Until the last alienated morsel relapsed to the Danish monarchy in 1779, there were only two periods in the course of their long history during which they were united under one prince. One of these periods lasted for fifty-five years, the other lasted for twenty-one years; and the most recent of them was more than three centuries ago. Since then they have never been combined independently of the kingdom of Denmark proper. Before 1779 they were not (with those two exceptions) ever combined at all. Since 1779, until this controversy began, they were under the absolute government of the King of Denmark, and had no independent rights at all. Any thing less like "a union of four hundred years, independently of Denmark proper," can not well be conceived.

If the history of actual practice can not be made to yield much evidence in favor of this indissoluble union theory, the "charters" that have been invoked in aid are a still more lamentable failure. This part of the German case is so curiously

weak, that it is often difficult to believe that any man having a reputation for common sense to lose should have seriously advanced it. There are two points which have to be proved—1st, that the two duchies are by right independent of Denmark; 2dly, that they are indissolubly united together. In behalf of each of these propositions a charter is invoked—in favor of the first the "Constitution" of King Valdemar, and in favor of the second the "Privileges" of King Christian I. There are many serious difficulties in the way of discussing King Valdemar's constitution; but the first of those difficulties is as conclusive as the first out of the twenty that prevented the Maire of Ivry from delivering the keys of the town to Henri Quatre. The king, when he was informed that the first reason was that there were no keys, said that in that case it was unnecessary to go into the other nineteen; and so our readers will perhaps spare us the necessity for stating our other reasons for not discussing Valdemar's constitution, when we inform them that it does not exist. There is no such document. High and low, in town and tower, in library and record-chest, patriotic German professors have hunted for it with the indefatigable pertinacity which distinguishes their race; but the provoking parchment will not be discovered. Well, then, it may be asked, how did any one contrive to evolve the idea of its existence? The answer to this reasonable question will show on what a microscopic foundation a German professor can erect a theory of towering proportions. There is in a Holstein convent a certain parchment, without date of place or seal, purporting to be a letter written in June, 1448, by a certain Count of Oldenburg, who subsequently was elected King of Denmark. In this letter, written apparently for the purpose of obtaining his election to the crown, the count says that he has been shown a number of old documents, one of which contains a Latin passage signed by King Valdemar III. and his council, and dating from A.D. 1326. The Latin passage runs as follows: "*Item Ducatus Slesvici regno et coronæ non uniatur nec annectetur ita quod unus sit dominus utriusque.*"* Upon this

* "Also that the Duchy of South Jutland (Slesvig) shall not be united with or annexed to the crown and kingdom, in such a manner that there shall be one lord to both."

foundation rests what the German writers call "The Valdemanian Constitution." It may be briefly dismissed. The Valdemar who sat on the Danish throne in 1326 was a boy of twelve years old, in the first place: and in the second place, he was a usurper who had just been put upon it by an adventurous uncle. Four years later he was driven out again, and the rightful sovereign returned. King Valdemar therefore was not exactly the kind of man—or rather boy—who would have authority to make a constitution that was to bind the Danish monarchy for five centuries. It is further remarkable that no other allusion is made to the existence of this curious promise, even in the state papers of the time in which the mention of it would most naturally find a place. The only evidence of it is that, more than a hundred years later, a Count of Oldenburg, in a letter whose genuineness is gravely doubted, makes a statement which is wholly unattested by any other person, that a document had been shown to him, of whose authenticity we have no proof, purporting to record that the boy-usurper made this promise at the very moment of his usurpation. Granting this heap of assumptions, what does the promise really undertake? It undertakes—not that Denmark and Slesvig shall never be administratively or legislatively united—but *that they shall never be ruled by the same king*. In other words, it promises that an arrangement which, in regard to parts of Slesvig, has existed for four hundred years and in regard to the whole of it, for a century and a half, which has been sanctioned by the Congress of Vienna, and has never been called in question by the Slesvigers, or the Germans themselves, shall never take effect. King Valdemar comes somewhat late into the field. And to a document such as this, not only Germans, who merely want a rag of argument to cover the nakedness of their ambition, but even Englishmen, can be found to appeal as to an ancient and valid charter.

So much for Slesvig's "independence of Denmark." The other point in support of which the Germans appealed to ancient documents was "the indissoluble union of the two duchies." Compared to the constitution of King Valdemar, the document which they invoke for this second purpose is almost respectable. But though it lacks the elements of absurdity which belonged to the last case, its real value is scarcely

greater. It consists of a passage in a charter granted by King Christian I. in the year A.D. 1460. The passage has been much insisted on in Germany, and in fact has been converted into a kind of motto for the "sympathizers," who, after the fashion of such sentimentalists, unite gushing emotions with very practical views upon the subject of territorial acquisition. The passage is as follows:

"That the lands shall remain for ever together undivided."*

Assuming that this promise meant that Slesvig and Holstein were never to be parted—for every step in the vexed question has been a battle-field—the question arises, what Christian meant by "never parting" them. We can discover this in some degree from the rest of the charter out of which this clause is taken. It did not mean that the two duchies should have

* The meaning of the original has been the subject of much contest. The words in the Low German of the period are—"Wy lauen dat se bliven ewich tosamende ungedelt." The two last words obviously open a wide field for controversy. They may mean that Slesvig and Holstein shall always remain together, and never be divided from each other. Or they may mean that both Slesvig and Holstein shall remain each of them undivided; that is to say, that they shall each of them be free from those ulterior subdivisions which in the middle ages were so common and so grievous a curse. This last interpretation is rendered probable by the fact that, before Christian's time (and indeed after it), the duchies were the victims of constant subdivision. The same view is also corroborated by the rest of the clause from which this isolated passage is extracted. It runs thus:

"These lands aforesaid we promise to do our best to keep in good peace, and that they shall remain for ever together (or both of them) undivided. Therefore shall nobody feud upon the other, but each shall be content with what is right. And in order that such peace may be kept so much the better, we shall and will have our bailiffs to belong to the natives of such lands, and give them our castles and fiefs, and to no one else."

Keeping the peace, therefore, seems to have been the object of the clause. The promise not to divide the lands was merely a portion of the promise to prevent internal feuds. It is obvious that infinite subdivision would endanger the peace, and promote disputes. On the other hand, the division from each other of the two lands which lie on either shore of the Eyder would not in any perceptible degree tend to endanger the peace. It is probable, therefore, that Christian was referring not to the separation of the two lands from each other, but to the internal subdivision of each. The divisibility of fiefs—that is to say, of states—was a matter upon which subjects were always very sensitive, as indeed the Germans ought to know better than most people.

the same diet; for the charter provides one diet for Holstein, and another for Slesvig. It did *not* mean that they were to have the same tribunals or the same laws; for the charter provides a Jutish code of law for Slesvig, and a German code of law of Holstein. It did *not* mean that they were to have the same executive administration; for the charter provides that Slesvig should be administered by a drost, who was to be a Slesviger, and Holstein by a marshal, who was to be a Holsteiner. If, then, this "indissoluble union guaranteed by ancient charters" was not a legislative, nor a judicial, nor an administrative union—if it involved neither a common diet, nor common law courts, nor a common government, what was it? It could only have been a dynastic union; for nothing else remains. Christian I. promised only that he would retain the two duchies under his own rule, and that his successors would do the same. During the three centuries which succeeded its promulgation the promise was, as we have seen, but indifferently kept. But never, since the day when King Christian signed it, has it been better kept than during the last fifty years. The kings of Denmark since 1779 have never shown the slightest inclination to break the dynastic tie which binds Slesvig to Holstein. If the suggestion has been made, it has not come from them. The present federal execution undoubtedly tends to violate the undertaking "that the lands shall remain for ever together undivided;" but no other measure that has ever been taken for the last hundred years can be charged with such a tendency.

But after all, an argument upon a charter of King Christian I., in 1460, which has been recognized by no subsequent legislation, can only be justified on the principle of arguing with a fool according to his folly. No one who recollects the contrast between what Europe was then and is now, can be blind to the absurdity of disinterring an obsolete proclamation from its tomb beneath the dust of centuries, and attempting to found on it a reversal of every thing that modern legislation or modern diplomacy has sanctioned. In England, at that time, the last of the barons was raising and pulling down thrones at his pleasure; the English king still lived who had worn the crown of France; France, though then free at last, contained neither Brittany, nor Picardy,

nor Calais, nor Lorraine, nor Burgundy, nor Provence; the Moor still ruled in Spain; Holland was still a fief of the Holy Roman empire; and the Russian czars had but just emerged from the dominion of the successor of Genghis Khan. Since that time revolution after revolution has swept over Europe. War has succeeded upon war; boundaries, institutions, religions have been changed in almost every country; old landmarks have been twice overthrown by desolating wars; and twice congresses have assembled to reconstruct the map of a great part of Europe, and to grant a new title to its rulers. Denmark has not been exempt from the common law of change. Its boundaries have been repeatedly remodeled; its territory has been laid waste more than once by war; its religion has been revolutionized; its institutions, its laws, and the arrangement of its internal administration have been altered again and again. The very charter of Christian I., on which these theorists rely, has been abandoned in all its most essential points. It provides that the monarchy shall be elective; the monarchy is and has long been hereditary. It provides that the duchies shall be governed by one set of officers: they have been for many generations governed by officers of a totally different kind. It fixes the places at which the diets shall meet: they have not met there for centuries. It secures the highest position in the administration of each duchy to the bishop: the power of the bishops has utterly passed away. It provides that none but Slesvigers shall hold high office in Slesvig: whereas, until the last fifteen years, those offices were generally occupied by Holsteiners and Germans of every kind. And yet it is to this antiquated and forgotten document, of which there is scarcely a provision which later usage has not set aside, that these theorists, who play the part of jackals to German ambition, have gone to find, in a garbled extract from an ambiguous clause, a justification for unprovoked aggression, and a fair cause for bringing down upon Europe a renewal of the miseries of war.

Difficulties of this kind, however, were a matter of small importance to those who wanted, not an argument, but a catch-word. It was easy enough to talk glibly about the constitution of Valdemar, as if such a document really existed, and to reiterate the scrap out of King

Christian's "Privileges," as though it sanctioned the arrangements for which the Germans were pressing. Undismayed by any flaws in their case, the national party set to work to agitate. They invented a Schleswig-Holstein flag, and composed a Schleswig-Holstein song, and accumulated a Schleswig-Holstein literature, which, if it has utterly bewildered the understandings of foreigners, fully answered its purpose of misleading the mass of ordinary German readers. The propaganda of anti-Danish sentiments among the German population in Holstein and the southern part of Slesvig was carried on with great success. It naturally would not be a very difficult matter to bring about this result. The Germans flatter themselves that they are a very superior people to the Danes, especially in the matter of language; and the political subordination, which was the necessary consequence of numerical inferiority, was inevitably galling. Their feelings were much those with which the French in Canada still look upon their English rulers. If no external cause was at hand to excite it, such a feeling might lie dormant for a very long time; but fanned by an unscrupulous and indefatigable agitation, it was easily kindled into a flame. With such materials the national party worked away, well supported from Germany, and scarcely at all counteracted by the easy-going prince who sat on the throne of Denmark, until the eventful year 1848 arrived.

The courageous student, who is steering his way painfully through the intricacies of this question, may well breathe a sigh of relief when this important landmark heaves in sight. It is a half-way house at which he may securely rest, and lay down the burden of historical facts, which he has been forced hitherto to carry along with him. From this point the controversy assumes a totally different shape. Every element of importance in it is new; every old consideration, which up to this time was essential, becomes comparatively worthless. From this time forth we shall hear nothing more of ancient charters and imaginary constitutions; we shall lose sight entirely of the "indissoluble union." Instead, we shall be compelled to rummage the less attractive, but at all events more reliable lore of modern diplomacy. Before 1848 every argument was historical; after 1848 every

argument is diplomatic. The only documents with which we shall have henceforth to do are dispatches and protocols and treaties. It is only a revolution whose sharp edge can draw this deep dividing-line between the old and the new. And the Danish duchies, like the greater part of their neighbors, had their revolution in 1848.

In the first month of that fateful year, before the revolution at Paris had given the signal of disturbance to the world, the King of Denmark died. His successor—the king whose recent loss we have such good cause to lament—was a man of liberal impulses, and resolved to change his despotic rule for a more constitutional form of government. In order to give his subjects a voice in the management of the general affairs of the country, he resolved to create a representative body common to the whole kingdom. The proportions in which he proposed to assign the rights of election to this assembly were not only fair, but extravagantly favorable, to the duchies of Slesvig and Holstein; for, though the duchies only contain three inhabitants to every five contained in the "kingdom"—that is, in Denmark proper—the king proposed that the duchies on the one side, and the kingdom on the other, should return an equal number of members. Any one who had merely the interests of the duchies at heart would have accepted the proposal eagerly. But, of course, it did not suit the views of the German party. Its effect would have been to link the duchies more closely still to the crown of Denmark—to extinguish all disaffection in Slesvig—and to dash for ever the magnificent dream of a German fleet riding in what once were Danish harbors. Accordingly they proceeded without delay to organize a resistance. If they had been left to their own resources, the resistance would probably not have been either very formidable or very prolonged. Unfortunately at this particular crisis came the revolution of February. Within three weeks from the receipt of the intelligence that Louis Philippe had been ignominiously driven from his capital, all Germany was in a flame. In Carlsruhe, Munich, Vienna, Dresden, Berlin, the mob had risen against the sovereigns, and the sovereigns had pusillanimously consented to do whatever they were bid. With the treachery which is the twin sister of cow-

ardice, most of them took the earliest opportunity of revoking in security the concessions to which in their terror they had sworn. But in the interval of their abasement the national party was supreme; and both kings and demagogues had equally cogent reasons for desiring to foment disturbances in Denmark. The kings were only too glad of a safe vent for the madness of their subjects; the demagogues burned for a chance of investing the revolution with the halo of military success.

As soon as the leaders in Holstein were well assured of the support of Germany, they lost no time in acting. A large and tumultuous meeting was assembled at Rendsburg, in which a series of requisitions were addressed to the king, containing among other things a demand that Slesvig should be ceded to Germany; and five of the chief agitators were sent off to Copenhagen to present this modest petition to the king. It need hardly be said that the suggestion was politely but firmly declined. But the Holsteiners were in no mood to wait for an answer. Three days before that answer arrived they proclaimed a provisional government at Kiel; and a few hours afterward, by a sudden and bold attack, they surprised the important fortress of Rendsburg. Four days later a Prussian army set out to march to their assistance; and within less than a month after the meeting at Rendsburg, Slesvig was occupied by upward of twenty thousand German troops. Proceedings so well concerted and so rapid took the Danes entirely by surprise. They had dreamed of no danger, and had made no preparations against attack. Even if they had foreseen it, it might have been difficult for them to ward off successfully what was in effect not a rebellion in Holstein, but an invasion on the part of Germany. The result, however, of the first onset was that the Danes were defeated with great loss at the town of Slesvig; and by the beginning of May they were forced to evacuate the duchy altogether.*

* The Germans have devised one or two curious theories concerning this rebellion. One of them is that adopted by Baron Schleinitz, that there was in reality no rebellion at all, but that the Germans "never ignored or even questioned the sacred rights of their legitimate prince, even at the height of the contest" which they were carrying on against his government. The distinction is ingenious; but the countrymen of Pym and Hampden have a right to complain that it is a plagiarism. Another theory is, that the Holsteiners only revolted in order to

We need hardly follow the vicissitudes of the war. It lasted with various fortune and occasional respite till the autumn of 1850. But Prussia did not long continue to pursue the rash and lawless course upon which she had entered under the dictation of the rioters of Berlin. Menaces from St. Petersburg forced her to leave her insurgent allies in the lurch, and to withdraw her troops from Denmark before they had been six weeks in the field; and the pressure of the other great powers compelled her, after infinite negotiation, to conclude a peace with the Danes in June, 1850. This peace had but one condition; in every other respect it was peace, pure and simple. That one condition was, that Denmark should invoke the German confederation in order to pacify Holstein. This promise to leave Holstein to Germany to pacify was the starting-point of all future complications. As far as Slesvig was concerned, Denmark had done this easily for herself. A brilliant victory had driven the revolutionists out of it, with the exception of a small corner that could only be attacked by violating the frontier of Holstein. But the pacification of Holstein, which Denmark was not allowed to do for herself, was a much more serious matter. At first, Denmark appealed to Prussia, which

guard against the effects of a "Copenhagen revolution," which had deprived the king of his free agency. The "Copenhagen revolution" was a very mild affair. It was merely a petition presented by the municipal body of Copenhagen to the king that he would change his ministers. The proceedings were perfectly peaceable; and when the petitioners found that the ministers had already resigned, they dispersed without tumult. The Danes indignantly deny that it was a revolution, and cite in proof the fact that not a single pane of glass was broken on the occasion. There was certainly nothing in the subsequent demeanor of the king to indicate that he regretted in the least degree the change of ministers he was then induced to make. But the most material difficulties in the way of this theory are the dates. The dates were as follows: The meeting at Rendsburg, demanding that Slesvig should be ceded to Germany, took place on the 18th of March. The news of the change of ministry at Copenhagen, which took place on the 21st, did not reach Holstein till the 23d of March. On the same day the provisional government was declared at Kiel. The next morning, quite early, the garrison of Rendsburg were surprised and overpowered by Holsteiners who had assembled from various parts of the country; and that same day (the 24th) the King of Prussia, at Berlin, wrote to the Duke of Augustenburg promising military support. Surely it is idle to pretend that all these various movements were caused by nothing else than the news of the change of ministry at Copenhagen.

for this purpose represented the confederation; but Prussia, unwilling to consent and afraid to refuse, fought off for some time upon various pretexts. At last, Austria interfered on account of this and other matters; the celebrated protocol of Olmütz was signed; and, under its provisions, order was at last restored in Holstein by the appearance in that duchy of a Prussian and Austrian army, in February, 1851. But these powerful allies, having once established themselves in Holstein,* behaved toward the Danes, whom they came to assist, much in the same spirit in which their countrymen, Hengist and Horsa, are said to have behaved to Vortigern. They entirely declined to move out of it again, except for a consideration. They had come professedly to pacify the duchy; but their idea of pacification apparently included the retention of it in their own possession until they had extorted from the lawful owner some concession in the nature of a ransom. This ransom, in the present case, was chiefly a guarantee against the incorporation of Slesvig and Denmark. Such a demand, put forward as a condition of doing that which they were bound to do without any consideration at all, was almost as gross a breach of public law as the invasion of 1848. But the great powers were thoroughly tired of the question, and Austria and Prussia were in a condition to keep Holstein as long as they thought fit. Denmark had, therefore, no choice but to give them what they desired.

It was a curious coincidence that Denmark should have had to yield to the reactionary and despotic Austria of 1851, some part at least of the same demands that had been made by the revolutionists of 1848. The truth was that Denmark was between two fires. Austria had no taste for Schleswig-Holsteinism, and probably abominated the national party as heartily as Denmark could do. But she cherished fears of a totally different char-

acter. She looked upon the sufferings of the German nationality in Slesvig with much philosophy; but the constitution of the legislative body in Denmark excited her liveliest apprehensions. The King of Denmark had granted to his Danish subjects a very liberal constitution—rather more liberal than we in England should be inclined to approve; but, having granted it freely, he resolved to stand by it honestly. It was this constitution that made Austria nervous upon the subject of the incorporation of Slesvig. She was not sentimental upon the subject of the domination of a Danish over a German nationality. But she knew that if Slesvig and Denmark were incorporated, Slesvig must receive the institutions of Denmark; and consequently there would be a German community, as free as England, living on the north bank of the Eyder. Terrified at the prospect of an active liberal propaganda, composed of exiles from every German state, conspiring, printing, haranguing, actually within earshot of Germany, she resolved to nip that danger in the bud; and it was intimated to Denmark that a guarantee against the incorporation of Slesvig must be a condition precedent to the restoration of Holstein. Thus Denmark's very virtues were turned against her. Her freedom was no merit in the eyes of the democracy when the democracy was dominant; for free institutions are counted as dirt beneath their feet by a democracy that is bent on conquest. But that freedom was a deadly offense in the eyes of despotism, when the democracy had run its appointed course, and the reaction had set in.

At the same time, as a kind of pledge that she had no territorial acquisitions in view, Austria offered, if Denmark would give the required guarantees, to join the great powers in settling beyond all possibility of cavil a question of succession to the Danish throne, which was even then looming in the distance, and which threatened to be dangerous. Thus pressed by present necessity, and tempted by the hope of a solid compensation, Denmark, after making many ineffectual efforts to escape, prepared to yield. Her statesmen had cherished the hope that the favorable opportunity might be used for cutting the knot of all future difficulties, and removing a sore temptation from before the eyes of her ambitious neighbor. If one homogeneous Danish kingdom could have

* Being on a visit to Holstein at the time, we saw the Austrian troops, and walked among them in the public gardens, with their swords dangling at their sides, ready for any outbreak. The officers were quartered on the inhabitants against their will. Said the clergyman at whose house we were staying: "I have three Austrian officers quartered on my family, and because I had not room for them I am compelled to pay their board at the hotel, and it has already cost me a good many pounds sterling." It was a bitter pill, but he could not help it.—[Ed. ECCLECTIC.

been constructed north of the Eyder, all pretense for the interference of Germany in the internal affairs of the Danish monarchy would have been removed. But that was not to be. No aid was at hand: England was weary, and Russia adverse: Austria and Prussia were obdurate; and the chance of procuring for the Danish succession the guarantee of a European treaty was a set-off not to be despised. There was no help for it. The weak must yield. At last, therefore, the Danish Minister for Foreign Affairs betook himself to the composition of dispatches, which were to satisfy the demands of Austria and Prussia. A correspondence followed, in which the scheme of government which the King of Denmark had consented to adopt was clearly explained; and as soon as they were satisfied upon this head, the Austrian and Prussian governments restored Holstein to the king. They even went a step further, and signed the treaty of London, under which the Danish succession was regulated according to a scheme unanimously approved by the northern and western powers.

Now it is upon this correspondence that the reader who wishes to understand the Schleswig-Holstein question in its present phase must fix his attention. It is the pivot on which the whole controversy turns. In it are contained, if any where, the pledges on the part of Denmark, the fulfillment of which all Germany alleges to be a condition precedent to the performance of the treaty of London. For what reason it was resolved to take these engagements in the vague language of a dispatch, instead of in a formal treaty, it is not now necessary to discuss. The result has been an infinite addition to the perplexity of the dispute. It requires no little labor to ascertain what it was that Denmark really promised, and what it is on which the German powers have now a right to insist. But still, as it is to this correspondence that they appeal to justify them for dishonoring the signatures which they affixed to the treaty of London, it is necessary for those who would master the intricacies of this question to consider the successive dispatches somewhat in detail.

Fortunately there were only three dispatches with which it is necessary to concern ourselves, and only one of these is of primary importance. The first dispatch

is one from M. Bluhme, Minister of Denmark to Austria, explaining the intentions of the king in respect to the government both of Slesvig and Holstein. The next is a reply from the Prince Schwartzberg, Austrian minister, setting forth at length the interpretation which his court, in behalf of Germany, placed upon the Danish explanations. The third is a reply from Denmark accepting this interpretation without demur. The dates of the three dispatches are respectively, December 6th, 1851; December 26th, 1851; January 29th, 1852.

The dispatch of the Danish minister, Bluhme, commences with a vigorous protest against the curious interpretation affixed by the Austrians to the word "pacification." Then it proceeds to state in detail what the king's intentions are with respect to the future government of his kingdom. He is willing to renew the declaration already made by his father, and also by himself, that he will not incorporate Slesvig with Denmark, and will take no step that has that end in view. He also consents to maintain certain social ties between the nobility of Slesvig and Holstein, consisting principally in some facilities for borrowing each other's money, and the privilege of mutual admittance to certain conventual institutions maintained in each duchy. At the same time he distinctly states that he "definitively rejects the so-called Schleswig-Holsteinism;" and that he will not renew the tribunals of appeal which the duchies had enjoyed in common, or the administrative system under which the local government of the two duchies was carried on by the same set of superior officials. This community of tribunals and of ministers had been accorded to the two duchies principally since 1834, but it had been made the pretext of rebellion, and therefore it could not be revived. The king further intimates his intention of introducing representative institutions for the Danish monarchy as a whole, and he proposes to do this with the coöperation of the assemblies of the various duchies.

M. Bluhme's dispatch of course occupies a very much greater space than we have been able to give it; but we have abstracted the substance of all the portions that are material to the present controversy. Prince Schwartzberg, who was then at the head of the Austrian government, replied to it on the 26th of Decem-

ber, 1851. This Austrian reply is, with the exception of the treaty of London, the most important paper in the whole controversy; for it contains, in fact, the celebrated contract of 1851-52. It was acceded to by Prussia, the other commissary of the confederation; it was sanctioned by the Diet, and therefore it is conclusive against Germany: it was formally accepted by Denmark; and it states in detail not only the meaning to be attached to the promises of Denmark, but also their binding character as a diplomatic instrument. It will be necessary, therefore, to extract the more important passages at length. First, we will arrange the two passages in which Austria distinctly declares that she regards the Danish declaration of intentions in the light of an international covenant, and that she will only evacuate Holstein, and sign the treaty of London, in consideration of that declaration, when she learns that Denmark attributes to it the same binding character:

"From our earlier communications your excellency is fully acquainted with the points of view from which in general we regard these declarations of the Danish court. You will therefore be prepared to learn that, to hasten the termination of this affair, we are quite ready to express our opinions upon the views of his majesty the king, which are now communicated to us, but that we, on our side, can only do this upon the supposition that we have before our eyes a declaration which is looked upon by its author as binding, and whose accomplishment is therefore secured."

This passage is plain enough; but there is another toward the end of the dispatch which is more distinct still:

"If, now, the Danish government should be inclined to accept as their own that conception of its programme which we have set forth in this dispatch and the annex to it—if they would, at the same time, secure to us, in the binding form of a declaration made by the command of his majesty the king, the real execution of the intentions which they have only as yet officially made known to us as a possible eventuality—and if they would take their measures accordingly, so far as the opportunity at present exists—then we might securely count upon an early and friendly termination of the differences which have hitherto arisen between the various parts of the Danish monarchy, as well as, between it and the Germanic Confederation. We would give back the mandate under which, in common with Prussia, we represent the German Confederation in this affair,

and at the same time evacuate Holstein, and re-establish the full power of the sovereign in that duchy; we would answer in the Diet for the union thus effected; and at the same time we would hold the new internal foundation for the connection of the combined lands under one ruler to have progressed sufficiently to allow us to take part in an international guarantee of the integrity of the monarchy by the recognition of a common succession."

It is evident that if Denmark accepted this interpretation of her intentions, and if, in consequence of that acceptance, Austria did evacuate Holstein, and did sign the treaty of London, an engagement was contracted by Denmark toward Austria as distinctly as words could contract it. Denmark did accept the Austrian interpretation. The following are the words of M. Bluhme, in a dispatch dated January 29th, 1852:

"Under these circumstances it is with peculiar satisfaction that, in pursuance of authority given me by the king, I hereby make the following declaration: 'That the king, our most gracious lord, recognizes as in agreement with his own, the interpretation of the intention communicated on his behalf to the Courts of Vienna and Berlin, which is contained in the dispatch of the Austrian Cabinet of December 26th, 1851, and in the annex to the same—both in general, and especially that part of it which refers to the non-incorporation of Slesvig with the kingdom.'"

It follows, therefore, beyond all question, that Denmark did covenant, in 1851-2, to fulfill the programme of domestic policy drawn out for her in the Austrian dispatch. It has been necessary to make good this point, because some zealous Danes, acting on the principle that you should never admit anything, have called these stipulations into question. So far is plain enough. But when we come to inquire what these stipulations are, we shall not find our path so clear. The vague language of a courteously-worded dispatch is a bad vehicle for positive engagements; and the consequence of the form adopted is, that this informal contract between Denmark and Germany possesses a double quantity of haziness which is apt to attach to all international agreements. However, this Austrian dispatch is the only source from which any light can be obtained upon the subject; and therefore to the Austrian dispatch we must return.

There is one point, and only one point, in these stipulations which has since become of international importance. It is the promise, so constantly repeated, not to incorporate Slesvig. Closely connected with this promise are the stipulations which relate to the nature of the united constitution which was contemplated, and the undertaking that the various parts of the country should be treated equally. The following are some of the most material passages:

"The Imperial court learns with satisfaction the resolution of H. M. the King of Denmark to revive not only in the Duchy of Schleswig but in that of Holstein, the institution of provincial estates, which still legally exists: and when H. M. at the same time announces his intention of introducing an *organic and homogeneous constitutional connection* of all the parts of the country into one united monarchy (in a lawful and constitutional manner, and therefore after consultation with the provincial estates of the said duchies, and so far as concerns the kingdom of Denmark, by negotiations with the Reichstag, and in respect to Lauenburg with the coöperation of the Ritterschaft and Landschaft), the Imperial court can only recognize this intention of the king as being directed to the fulfillment of a duty that cannot be declined."

"H. M. the emperor expresses his confident expectation, that the king, both in the future organization of the monarchy, and in the provisional conduct of affairs, will know how, with equal solicitude for all, to preserve, by appropriate arrangements, to all the various parts of the country, the position which belongs to them as *members of a whole, in which no part is subordinated to another.*"

"The maintenance of *independent (selbständig) constitutional administrative institutions* in the various parts of the country, without prejudice to the combined government of their common affairs at the center, is, in our belief, an indispensable condition of the establishment of the internal tranquillity of the monarchy."

There are a few words (they are italicised) in these paragraphs which were probably little weighed at the time when they were written, but upon which a gloomy pile of controversy and recrimination has been subsequently raised. What is signified by the promise to preserve to the various parts of the country in the construction of a common constitution, the position which belongs to them "as members of a whole, in which no part is subordinated to any other?" In other words, in electing a common parliament, how many members is each part of the

country to have, so as not to be "subordinated" (*untergeordnet*) to any other? Most people, who think of the examples of Austria, Italy, Germany herself, would be inclined to say that the number of members should be distributed chiefly with reference to population. Such a constitution would best correspond to the phrase "an organic and homogeneous connection of all the parts of the country into one united whole." As, however, we shall have occasion to see further on, Prussian ministers, members of the Holstein assembly, nay, committees of the diet itself, were found to maintain the startling doctrine, that the promise would only be satisfied when *each* of the duchies, even little Lauenburg, should have as many members in the common parliament as all the kingdom of Denmark. It is enough for the present, to say that there is no hint of such an idea in these dispatches.

The great point, upon which the dispatches on both sides are very emphatic, is, that Slesvig shall not be incorporated with the kingdom of Denmark. As a set-off, the German powers were willing to concede that the political separation between the two duchies should be marked as strongly as the king pleased. It must always be borne in mind that the time at which this correspondence was conducted was the very flood-time of the reaction; and that therefore the objects of Germany differed diametrically from those which it had sought three years before, or which it is seeking now. The imposture of Schleswig-Holsteinism, the dream of a great Teutonic republic, the wild nationality frenzy, were far enough then from the thoughts of German rulers. Their only care was to keep the ultra-liberal institutions of Denmark at a safe distance from the German frontier. Therefore they were zealous in resisting the incorporation of Slesvig with Denmark; but they were wholly indifferent to the separation of Slesvig from Holstein. It is necessary to remember this, in order to understand why the Austrians in this dispatch are so anxious that the constitution of Denmark should not be introduced into Slesvig, and why they consent so readily that the whole Schleswig-Holstein theory and the indissoluble union guaranteed by King Christian's "Privileges" should be put aside as diplomatic lumber. The following are the passages which guarantee upon the one side the non-in-

corporation of Slesvig, and sanction on the other the permanent separation of Slesvig and Holstein :

"In the declaration of his Majesty the King of Denmark that neither shall any incorporation of the duchy into the kingdom take place, nor any steps be taken having that for their aim, the imperial court sees with satisfaction a new confirmation of the promise which was given by the late King Christian VIII. to his subjects, and afterwards renewed by the present sovereign after the treaty of the 2d of July, 1850, and in accordance with the fourth article of that treaty, was communicated to the Germanic Confederation as a resolution taken by the king for the pacification of the country. When, on the other hand, his Majesty of Denmark considers those other declarations which were spontaneously made in the diet by his predecessor on the throne upon the 7th of September, 1846, and which were acknowledged by it to be satisfactory by the resolution of the 17th September (according to which King Christian VIII. entertained no intention of introducing any change in the relations which then united the Duchy of Holstein to the Duchy of Schleswig) no longer in all points suitable to the present condition of affairs, and in particular has convinced himself that the connection in respect to administration, and courts of appeal, which has existed between the two duchies chiefly since 1834, but which is now actually abolished in consequence of recent events, must be abolished also for the future. The imperial court upon its side admits that the said declarations of September 7th, 1846, presupposed the then existing conditions of the Danish monarchy, and did not involve the legal result of making dependent upon the consent of the confederation the resolutions which, under changed circumstances, in pursuance of his sovereign rights, the king might take, and which do not affect the legal competence of the confederation. The imperial court will therefore not object upon its own behalf to the abolition of the before mentioned connection, and will use its influence, that this measure should not be objected to by the diet."

Thus the great Schleswig-Holstein fiction, which learned men had labored for so many years to build up, was formally exploded. It is evident that whoever else believed in the charter of King Christian, the Austrian minister who composed the dispatch did not, nor the other German governments who, in diet assembled, confirmed it. But there was another point upon which Austria and Germany looked with a great deal more interest at that time :

"As his majesty the emperor sincerely de-

sires to see the peace and prosperity of the Danish monarchy established as soon as possible by a definitive organization adapted to its needs, he allows himself confidently to hope that the Danish government, in their efforts toward this important end, will perhaps not give an exclusive preference to those institutions which have been bestowed upon the kingdom of Denmark proper in recent years, but that they will keep before their eyes, as their sole sure-guide, the permanent relations of the collective monarchy, and the object of strengthening internally its union into a whole. *Once at ease upon this point*, his majesty will not delay, in conjunction with other friendly powers, to exert himself to secure that union by an international guarantee of a common succession."

This is a curious paragraph, for more reasons than one. It is common for German advocates to represent that the treaty of London was signed by the German powers in consideration of Denmark's promises not to incorporate Slesvig with the kingdom. They find it, in these more liberal days, convenient to forget the plain wording of the dispatch. The consideration is here categorically stated. Austria promises to sign the treaty as soon as she is at ease upon one particular point; and that point is, that Denmark should refrain (as she has done) from introducing into the whole monarchy the ultra-liberal institutions which had been recently granted to Denmark proper. The other curious feature in this paragraph is, that the treaty which the emperor undertakes to sign, is a treaty, not of mere recognition, but of guarantee (*Verburgung*.) The emperor, and through him all Germany—for Germany sanctioned the dispatch—pledge themselves to *guarantee* the succession of Prince Christian of Glücksburg. In other words, Germany hereby promises, not only to acknowledge Prince Christian's title, but to maintain it against all the world. Does any Austrian or German statesman ever perchance take up this not very ancient document? And can the most hardened diplomatist among them repress a blush of shame for his country when he reads over again this pledge so solemnly, so recently made, and so shamelessly forsworn?

Such were the essential points of the celebrated stipulations of 1851-52. A constitution for the whole monarchy, passed in a constitutional and lawful manner, and dealing equally with the various parts of the country—no incorporation of Sles-

vig, no reünion of Slesvig and Holstein, and an abstinence in the reörganizatiön of the monarchy from an "exclusive preference" for the existing institutions of Denmark—those were the main engagements contracted between the two nations in the correspondence of those years. We must now briefly follow the fate of

these provisions during the ensuing period, and see how a weapon, forged and sharpened by despötic sovereigns, was skillfully wielded by the democratic party for the gratification of that lawless lust of territory, which is the one great point upon which despotisms and democracies agree.

[TO BE CONCLUDED.]

From the Cornhill Magazine.

PHOSPHORUS AND CIVILIZATION.

PHILOSOPHY enables us to bear with great equanimity the misfortunes of others. Science, on the other hand, has the bad character of being an alarmist; it is constantly prophesying terrible consequences, or consequences that would be terrible did not Philosophy step in to reassure us by pointing out that our alarm is needless, since the predictions concern our descendants rather than ourselves. For example, Science has calculated the period at which all our coal, now so prodigally burned, will have dwindled to its last seam; but this destruction of our greatest source of wealth is contemplated with much calmness, because Philosophy not only points out that the period is still distant, but serenely relies on Science finding a substitute for coal when the coal is exhausted. *What* substitute? It is not the business of Philosophy to discover one; she merely says that heat having been declared to be merely a mode of motion,* some other means of getting the requisite motion will surely be found—and leaves you to find it.

This is very consoling. Can we not get a similar relief from a wide-sweeping view of another alarming state of things? I allude to the gradual degeneration of the race consequent upon a gradual exhaus-

tion of our stock of phosphorus. Like coal, the quantity of phosphorus on the crust of this agreeable planet is limited; and unlike coal, its place can not be supplied. Nations have done without coal, and may again do without it, but without phosphorus men and animals can not exist; and without abundance of phosphorus they will be stunted and rickety. Nor will any other element play its part.

Consider for a moment: every adult human being requires at least four pounds of phosphates to build up his bony framework, quite apart from the quantities used up in his softer parts. This amount is sequestered from the earth and never returns to it. Yet the earth without phosphates refuses to grow plants. Think of the millions upon millions of pounds which are drawn away from the primitive stock, and you will understand why vast stretches of Asia Minor are barren, why parts of Sicily, Palestine, Arabia Felix (once so fertile), and the plains of Babylon, are deserts. These lands have been robbed of their phosphates. If Egypt still preserves her ancient fertility it is because the annual inundation of the Nile renews the precious phosphates.

Philosophy considers this, as requested, and straightway begins to theorize upon it. She bids us remark the law of history (she is fond of such "laws"), that nations after emerging from barbarism into civilization, after growing in wealth, skill, luxury, and populousness, are always submerged by some fresh wave of barbarism. The puny citizen, enervated by luxury, can not withstand the stalwart

* "Heat only a mode of motion!" Such may be the dictum of Science; but Philosophy, jealous of accuracy in language, may not improperly ask, And pray, what is motion a mode of? Surely it is the manifestation of force, and heat likewise is a manifestation of force, most probably of the same force, but assuredly not of motion, otherwise it would be the manifestation of a manifestation.

barbarian. So it has been; so it will ever be. All the skill and all the appliances which make men formidable to beasts, fail to make men formidable to barbarians. With knowledge and wealth has come the corruption of luxury. It is that which has destroyed the rude and manly *virtus* of an elder time; it is that which makes men dissolute, selfish, timid, without fervor, without patriotism.

Are you quite sure of this, O philosopher? Is luxury so universal in civilized communities that nations no less than individuals are enfeebled by it? Have the millions been accustomed to Capuan indulgences? Let us abandon rhetoric for a moment, and see whether the enfeeblement of nations may not be traced less to the excess of civilization than to the deficiency of phosphorus. It is a paradox I set before you, no doubt; but it is not less likely to be a truth because it contradicts your opinions—which is the meaning of a paradox.

Did the barbarians always conquer because they were ignorant? No; because they were strong. They were truly the "sons of the soil," and of a soil not robbed of its phosphates, like the soil of old and crowded nations. The civilized Roman trembled at the presence of the gigantic Gaul; but the descendant of that Gaul is so little of a giant that he now boasts of his stature when he is four feet six!* It was remarked by Pliny that the Romans were rapidly degenerating in stature, and that sons were rarely so tall as their fathers; but he attributed this degeneration to the exhaustion of the vital sap, not knowing that a Liebig would come to proclaim the exhaustion of precious phosphorus.† What a prospect for man! His stature dwindles as phosphorus disappears. His race has been constantly robbing the soil of precious material which has not been returned to it, as nature requires, and the effect of this at last will be national bankruptcy.

Plants impoverish the soil; but all they snatch from it to build up their existences may be returned to it, and often is return-

ed, though civilized ignorance often wastes it. The animals eat the plants, and take up the phosphates into their own bodies. A judicious system of agriculture would restore all this to the soil, by careful distribution of the sewage, and by using the bones as manure. Even the quantities used up by man might also be restored, if the sewage were skillfully distributed, and if our practice of burial did not annually hide away the enormous quantities stored up in man's bony structure. The bones of men are buried, and thus, in a loose, unscientific sense, may be said to return to earth the phosphates originally derived from earth. But this is loose talk. The bones keep all their phosphates. It is only the organic matters which are decomposed in the grave; the phosphates remain and are not re-distributed through the soil.

"The only real loss of elements," says Liebig, "which we are unable to prevent, is of the phosphates, in so far as these, in accordance with the customs of modern nations, are deposited in the grave. For the rest, every part of that enormous quantity of food which a man consumes during his lifetime, which was derived from the fields, can be returned to them. We know with absolute certainty that we receive back in sewage all the salts and alkaline bases, all the phosphates of lime and magnesia, which the animal consumed in its food."

It is not probable that men will give up the practice of burial, so that all the phosphates stored up in their skeletons must needs be withheld from the soil; but it is probable that the growing necessities of men will force them into something like a rational use of sewage. We shall learn not to waste the tons of precious material which is hourly poured into rivers and seas; we shall have our guano in abundance and near at hand. Unless we learn this, our case is desperate. If men persist in consuming phosphorus, and in wasting it as they do now, Science foresees the end.

Yet Philosophy is calm, because the end is distant. Were it not so, the alarm would embitter our pleasant lives. We should be eternally fidgeting about phosphorus. Some dreadful statist would oppress us with his calculations, showing the effect of lucifer-matches upon Europe. He would exclaim: "Sir, lucifer-matches have wasted an amount of phosphorus

* A conscript once objected that he was below the standard height; the recruiting officer eyed him kindly, and exclaimed, "Four feet four—without your shirt—*c'est magnifique!*"

† "In plenum autem cuncto mortalium generi minorem in des fieri, propemodum observatur; rarasque patribus proceriores, consuente ubertate seminum exastione."—*Hist. Nat.*, vii. 16.

which might have equipped a mighty nation with its necessary bones." And our only reply would be, "Then let the mighty nation do with cartilage." We could

not patiently listen to such croakings. Every time we lighted a cigar we should think we were hastening the irruption of the barbarians. Intolerable!

From the Leisure Hour.

THE TREATIES OF VIENNA.

"Roll up that map of Europe—it will not be wanted for these ten years." These are the words, a little varying in other accounts, in which the dying Pitt addressed his niece, Lady Hester Stanhope. The great statesman was dying. The battle of Austerlitz had broken his heart. All his best schemes for Europe were crushed. The continent was more than ever prostrate before the overshadowing domination of Napoleon. The balance of power no longer existed. The historical map of Europe was entirely deranged. The well-known landmarks had been swept away. Old thrones had been shorn or abolished, and new thrones had been carved out for the usurper's kin. Austerlitz had continued this evil, had postponed the redress of national wrongs for many years. Pitt's health was feeble, his constitution shattered, and this last overwhelming blow was too much for one whose every thought was centered in his patriotism. He went back to his Putney villa to die. Few pages are more deeply interesting than those which tell of the end of the once all-powerful Prime Minister. It was a sad scene, yet not without a ray of light amidst the gathering gloom of ambition's sunset. "Like many, I have too much neglected prayer," said Pitt; "but I throw myself entirely on the mercy of God, through Christ." But evermore the state of Europe, and of England, weighed heavily on his mind. It is now known that his last words were to this effect: "Oh, my country—in what a state I leave my country!"

The words of Pitt were prophetic. Ten years passed away before that map of Europe, with which Napoleon had played such strange vagaries, could be reconstructed. Before the time of Napoleon,

the public law of Europe was mainly based upon the treaty of Westphalia (1648), which concluded the religious wars of Germany, and went far to advance France to the prominence in the affairs of Europe hitherto enjoyed by Spain. There were many wars and many treaties during the century and a half which ensued. Nevertheless, the territorial definition of States had not materially altered. Russia had become an empire, and Prussia a kingdom—each with extensions of territory. France had consolidated and extended her dominions under the fourteenth and the fifteenth Louis. Sardinia had conferred monarchical titles on the House of Savoy, and the Bourbon kingdom of the two Sicilies had been established. These alterations in the aggregate were considerable; but, notwithstanding their modifying effect, the treaty of Westphalia still constituted the most important document that regulated the written or positive international law of Europe. After the downfall of Napoleon, it became necessary that the public law of Europe should be again established on a fixed basis, in accordance with the alterations wrought since the treaty of Westphalia, especially by the desolating flood of Napoleon's conquest. We should observe that the expressions "treaties of Vienna," and, still more inaccurately, "the treaty of Vienna," are names roughly and conveniently given to a cluster of treaties and transactions which, after the fall of the first empire, constructed Europe on a new and universally recognized basis. The most definitive and important of these are known, from the locality, as the treaties of Vienna, although, in reality, they comprise the Congress of Verona, the treaties of Paris, and other important European

legislation, and have also an intimate prospective connection with the Holy Alliance.

Napoleon used to speak of "the sun of Austerlitz." That sun, however, waned and paled, and fitfully set at last amid lowering cloud and storm. When the allied armies had stormed the heights of Montmartre, and were ready to descend upon Paris—when the city had capitulated, and the allies had entered—when the Senate, by solemn decree, had deposed Napoleon—when the emperor found himself more and more deserted at Fontainebleau, with a sore struggle he abdicated, and, after a vain attempt to destroy himself, he set off for the mimic sovereignty of Elba. Louis XVIII., in accordance with the call of the French Senate, became King of France. The first step in negotiation which all the Vienna diplomacy assumed was the memorable Convention of April 23, 1814, by which it was provided that French troops should evacuate all that they held in Germany, Italy, and the Low Countries, beyond the frontiers of old France, as they stood on the 1st of January, 1792. By one blow the whole fruits of the revolutionary wars were thus swept away. Fifty-three fortresses, twelve thousand pieces of cannon, and nearly a hundred thousand men were at once surrendered. A week later followed the treaty of Paris. It substantially embodied the conditions of the convention, with important addenda. It was marked by a spirit of forbearance, and even of generosity, toward the French people. There were no instances of vindictive retaliation. France was even left with a small additional territory, compared with her limits before the epoch of revolution. But although the allies had thus destroyed Napoleon's map, they had not yet reconstructed their own. So to speak, there were now immense territories in the patronage of the allies. The populations of the regions thus severed from the Napoleonic empire amounted to nearly sixteen millions, and that of the external dependencies to many millions more. The treaty, however, made certain international arrangements which subsequently became identified with the treaties of Vienna. A leading principle was manifest; namely, that the second-rate states bordering on France should be strengthened, to resist future aggression from the warlike genius of their great and uncom-

fortable neighbor. Germany was again to be independent, under the guarantee of a federal union. Holland and Switzerland were to be independent; Italy divided into sovereign states; Malta ceded to England. It was agreed that all matters of detail should be left to a congress of all the great powers, which should assemble in Vienna in the course of the succeeding autumn. The provisions of the Congress of Vienna were still further anticipated by secret articles in this treaty of Paris.

The congress had not taken place in the summer, because the allied sovereigns had been occupied with their visit to England. When the autumn set in, Vienna, small as a capital city, but remarkable for the magnificence of its buildings, the beauty of its gardens and waters, the noble scenery of its country side, and the fashionable crowds with which it is thronged, filled fast with an august and imposing company. It was toward the end of September that the Emperor of Russia and the King of Prussia entered the Austrian capital. The Austrian Minister was the famous Prince Metternich, who subsequently presided over the proceedings of the conference. The wily Talleyrand came to represent France; Lord Castlereagh, and subsequently the Duke of Wellington, England. Russia, Austria, and Prussia were unwilling at first that France and Spain should share in the deliberations until much had been first settled. It was, however, agreed, mainly through Lord Castlereagh, Metternich, and Talleyrand, that the congress should consist, not only of the four allied powers, but also of France, Spain, Portugal, and Sweden. The Papal Nuncio was afterwards received. An anxious crowd of diplomatists from other states were also in attendance at Vienna, comprising ministers of state from Naples, Sicily, Bavaria, the Low Countries, Saxony, Denmark, Switzerland, Genoa.

The first proceedings of the congress were comparatively easy. One important alteration of the map of Europe had taken place just before its assemblage. Norway had been taken from Denmark and ceded to Sweden. This was according to a treaty between the Emperor of Russia and Bernadotte, King of Sweden, to which Denmark had acceded, and which England had sanctioned. Notwithstanding a heroic resistance by the Norwegians, this settlement was carried out. Of this

the congress of course approved. The congress had now to deal with those territories of which the allied armies had so recently held possession. Russia had occupied Poland; Austria, all Italy, except Naples; Prussia, Saxony; the armies of Wurtemberg and Baden held possession of the Rhine provinces; England, in conjunction with Sweden, occupied Holland; and Belgium, in conjunction with Portugal, part of Spain. The first acts of the congress, the easiest, and on the whole the most important, were simply to confirm the provisions of the treaty of Paris. These would offer no difficulty, but serious difficulties would arise in respect to Poland, Saxony, and Russia.

Alexander, Emperor of Russia, was, from many circumstances, the most striking and influential member of the congress. To his influence Prussia was totally and servilely subordinate. Lord Castlereagh, from the commencement, had detected this overweening influence, and strove to guard against it. It was most apparent when the subjects of the conference came on in the following order: Poland, Saxony, Belgium and Holland, Germany, Italy, Switzerland.

As we have stated, the armies of Russia were at this time in the virtual occupation of Poland. They held the Grand Duchy of Warsaw, as created by Napoleon, the Lithuanian and Ruthenian provinces, with Cracow and other important towns. Ever since its shameful partition, Poland has been a trouble and disgrace to Europe. Prince Talleyrand might well say of that partition that it was the "prelude, in part, perhaps, the cause, and even to a certain extent the excuse, of the disorders to which Europe had been a prey." Alexander demanded that the whole of Poland, so far as it was in his power, should be erected into a constitutional kingdom, of which he should be king. It is clear that at this time Alexander entertained a chivalrous dream of reestablishing the Poles in freedom and independence. Both Lord Castlereagh and Metternich strongly resisted this. Alexander burst into a rage. He lost all semblance of peace and moderation. He exclaimed: "I have two hundred thousand men in the Duchy of Warsaw; drive me out of it who can. You are always talking to me of principles. What do I care, think you, for your parchments and your treaties? There is one thing which

for me is above everything, and that is my word. Your law is a mere matter of European convention." Happily, however, the Emperor Alexander was one of those who could conquer themselves. Lord Castlereagh opposed him, and frequently in a dictatorial tone, that might be compared with his own autocratic language. In repeated memorials he declared that he opposed firmly and with all the force in his power, in the name of England, the erection of a kingdom in Poland, the crown of which should be placed on the same head with, or which should form an integral part of, the empire of Russia; that the wish of his government was to see an independent power, more or less extensive, established there, under a distinct dynasty, and as an intermediate state between the great monarchies.

At the same time Prussia, then as now almost the vassal of Russia, was willing to cede her own Polish provinces to the latter power, on condition of obtaining Saxony, and an indemnity on the Rhine. The fate of Saxony was doomed. Her prince had so pertinaciously attached himself to the cause of Napoleon, from whom he had received such substantial honors and rewards, and had so resolutely resisted all the attempts of the allies to win him over to their cause, that it was simply a question of total or partial dismemberment. Austria and France both sided with England against the two great northern military powers. It soon appeared not unlikely that the world might witness the edifying spectacle of a war among the peacemakers of Vienna. Alexander halted his armies on their homeward march, and Prussia armed her contingents. On the other hand, Austria put her armies on a war-footing; France was in no haste to disarm, and British troops were poured into Belgium. A secret treaty was made at Vienna (February 3d, 1815), between England, France and Austria, pledging themselves to carry out the provisions of the treaty of Paris, by force if necessary. Other powers were invited to concur, and the operations of the war were sketched out. The knowledge of this treaty gave alarm to the northern powers. They would not push matters to an extremity; Russia abandoned her claims to portions of Poland; Prussia would be content with a partial cession of Saxony.

Ever since the battle of Leipsic, Frederick Augustus of Saxony had been a sort of state prisoner. He was now invited to Vienna, and, despite his protests, had to submit to the decision of the allies. A portion of his territory, representing 250,000 people, was annexed to Hanover; a portion, representing 1,100,000, to Prussia. He was thus shorn of more than one-third of his possessions. Prussia acquired a portion of the Grand Duchy of Warsaw. These accessions of territory, with those on the Rhine, made her an immense gainer, and raised her to the rank of a first-rate power.

Belgium and Holland were united under the title of the kingdom of the Netherlands. Austria had no wish to retain her old Flemish possessions, which for centuries had been "the cockpit of Europe." The King of the Netherlands was also to be Grand Duke of Luxemburg, which, from its military importance, was attached to the new German confederacy.

This new German confederacy superseded the old German empire and the younger confederacy of the Rhine. The federal act established a diet, giving all the members separate or collective votes; giving to the thirty-eight members seventeen votes in the ordinary assembly, and seventy votes in the general assembly (Plenum).

In Switzerland, the territories which had been absorbed by France were of course resumed. The present Helvetic confederacy was founded. The Valais, with Geneva, Neuchâtel, and Basle, were united to Switzerland.

The position of Italy was one of serious difficulty. The inhabitants of Genoa had regained their liberty, and claimed to be restored to their ancient republican state, under the protection of England. Although they passionately protested against annexation, on the ground of the necessity of a barrier against France, they were assigned to Piedmont. Lombardy was again assigned to Austria. The question of Naples, however, created the greatest difficulty. Should Murat be deposed, and the Bourbons reinstated, or not? The Emperor Alexander was in favor of Murat, but Lord Castlereagh steadily urged the case against him.

But, before this and other questions could be decided, a sudden thunderbolt was to burst in upon the allies. One night there was a memorable ball at

Vienna, as memorable as a subsequent ball at Brussels. It was one of the most brilliant affairs of that brilliant Vienna season. An acute on-looker, alluding to the political differences that existed, observed, "The congress dances, but does not advance." A message of supreme importance was brought in to Prince Metternich—a message of electric effect—Napoleon had escaped from Elba. The news proved true enough. There had long been great reason to suppose that Napoleon was contemplating a descent upon France. Sir Neil Campbell, the English resident at Elba, had detected a great change in the emperor. Information had even been laid before the Congress of Vienna; but the Emperor Alexander had chivalrously thrown his protection round Napoleon, and strongly rebutted any such assertions or suspicions. Prince Talleyrand, however, on the 11th of March, formally laid the information before the congress, on the part of Louis XVIII. The congress accordingly issued one of the most memorable of its declarations. We quote one sentence: "They declare, at the same time, that, firmly resolved to maintain entire the treaty of Paris, of May 13th, 1814, and the dispositions sanctioned by that treaty, and those which they have resolved on, to complete and to consolidate it, they will employ all their means and unite all their efforts, that the general peace, the object of the wishes of Europe, and the constant purpose of their labors, may not again be troubled; and to provide against every attempt which shall threaten to replunge the world into the disorders of revolution."

The battle of Waterloo terminated the Empire of the Hundred Days. Even if that battle had not been fought, or even if the result had been different, it is plain that the ultimate result would have been the same. When English and Prussians had marched upon Paris, other immense armies were set in motion, and the soil of France was soon occupied by 1,100,000 invaders. Paris again yielded to Wellington and Blücher, under military convention; all the military points were occupied by foreign troops, and thus Louis XVIII. was again enthroned. The allies were now prepared to exact a terrible but just retribution for the national breach of faith. They imposed heavy penalties; but nothing was more grievous to the French than

an act of simple justice to which they were forced. In compliance with a requisition signed by all the artists of Europe then resident at Rome, the Louvre was stripped of the works of art collected there by the spoliations of Napoleon. And now most of the allies raised a clamorous demand for what would be a virtual partition of France. Let France be reduced to her ancient limits, such as they were before the Bourbon princes commenced their aggressive schemes. Austria demanded Lorraine and Alsace, Spain the Basque provinces; and beyond this a scheme was afloat for depriving France of her frontier provinces, and her strongholds on the Rhine. It was only by the united efforts of the Russian emperor, and by the representations of England, that France was saved from dismemberment and the extremity of humiliation.

On the 20th of November, 1815, the high contracting powers of Vienna concluded three principal measures, which included other treaties and conventions, for the final settlement of Europe. The first of these was the second treaty of Paris of this epoch. Compared with the first treaty, it was most disadvantageous for France. The map of Europe was again altered. The limits of 1790, still with a slight balance in favor of France, were adhered to, and the allies resumed most of the extra territory confirmed to France by the previous treaty. There was a period of long and anxious suspense before they definitely settled the terms on which France was permitted to retain her place among the powers of Europe. The fortifications of Huningue, near Basle, were demolished. Seventeen frontier towns were delivered up to the allies, to be held for five years by an army of occupation, to consist of 150,000 men, to be maintained at the expense of France. A sum of upwards of £81,000,000 was also exacted, payable by installments, for expenses and indemnities. These terms were most severe; but those which Napoleon had exacted, after his victorious campaigns, had been much severer still. The French people had the poor consolation, of which the veterans of the old army reminded them, that they were suffering even less than they had inflicted upon others.

On the same day another treaty was concluded between Russia, Prussia, Austria, and England. This was a measure of high importance, and of mutual secu-

rity. They solemnly reviewed the provisions of the treaties of Vienna, and laid great stress on those which "exclude forever Napoleon Buonaparte and his family from the throne of France" (*l'exclusion à perpétuité de Napoléon Buonaparte et de sa famille*).

At the same period there was concluded the celebrated treaty, the Holy Alliance. At this point England deserted her allies, declining to concur. The Emperors of Russia and Austria, and the King of Prussia, bound themselves, "in conformity with the principles of the Holy Scriptures, which order all men to regard each other as brothers, and considering themselves as compatriots, to lend each other every aid, assistance, and succor, on every occasion; and, regarding themselves toward their subjects and armies as fathers, to direct them on every occasion in the same spirit of fraternity with which they are animated, to protect religion, peace, and justice." The treaty proceeded to set forth that the three powers regarded themselves as delegated by Providence to govern those branches of one and the same Christian nation, of which Almighty God, the Father, the Son, the Holy Spirit, was the sole real sovereign. They furthermore invited into this Holy Alliance all the powers who should solemnly avow the sacred principles which had dictated it. The treaty excited considerable perplexity at the time. It was observed that this treaty was at the same time most vague and most solemn, and bound the contracting parties to nothing more than, as Christian princes, they stood already pledged to observe. The prince regent, in reply to a joint letter from the three sovereigns, requesting him to accede to it, declined to become a party to the treaty, but at the same time expressed his satisfaction with the nature of it, and gave an assurance that the British government would not be one of the least disposed to act up to its principles. It unfortunately happened that the Holy Alliance subsequently became identified with the principles and practice of arbitrary government. Its origin, however, we may believe to have been devised from deep and sincerely religious feeling on the part of the Emperor Alexander.

Three other Vienna treaties must be mentioned. The first related to the Ionian Islands. These were placed under the protectorate of Great Britain. The

second conferred on Russia a special payment of half a million, in consideration of extraordinary efforts she had made over and above her proper contingent. The third had reference to the custody of the person of Napoleon. Besides these, the Congress of Vienna legislated on the subject of slavery, affixing to it a European stigma, and beneficially regulated, or rather created, a public law of the great rivers of Europe—the Rhine, the Danube, the Vistula, the Po—calculated to simplify different systems, promote commerce, and abolish occasions of difference.

We have only given a slight view of the various international transactions which marked this important legislative era. The details of some treaties have been omitted, and other treaties have not even been mentioned. Under the former head are the assignment of the throne of the Netherlands to the House of Nassau, and the provisions for a constitutional government; as also the constitution given to Poland, which established a government and executive completely Polish. Under the latter head are the various treaties of detail rendered necessary to carry out the new territorial arrangements. In the reconstruction of Prussia, besides the treaties mentioned, there were special arrangements with Hanover, Saxe-Weimar, and Nassau.

In his recent address to the Corps Législatif, the Emperor of the French asserted that the treaties of 1815 have ceased to exist (*ont cessé d'exister*). This remark has justly provoked a great deal of criticism, and can only be understood with many exceptions and limitations. The instances which the emperor enumerates may be rapidly summed up. His own accession to the throne of France is the most prominent instance, and, as we have seen, is in verbal contravention of European legislation. It is, however, to be observed that the Congress of Vienna never contemplated the extreme case of putting a veto on the all but unanimous wish of the French people. The existence of earlier violations must also be admitted. In 1830 the kingdom of the Netherlands was dissolved. The difference of religion had been the main cause of unhappiness in this ill-assorted union. In the new arrangements consequent, the great powers pressed hardly on the insurgent state, and gave every possible territorial advantage to Holland. King Leopold, the admira-

ble sovereign of Belgium, has raised his country to high prosperity, and a higher degree of consideration than would otherwise have been attained. Russia, the moving power in the Vienna Congress, has, in the case of Poland, completely nullified its decrees. After the unhappy rebellion of 1820, Poland was incorporated as an integral portion of the Russian empire. Austria, by the resumption of Cracow, has not been left free from complicity in this guilt. The political map of Italy has been entirely altered, affecting the maps of France, Sardinia, Austria, and the Italian States. France has gained Nice and Savoy, and Austria has lost the fairest provinces of the Lombardo-Venetian kingdom, while, by the accession of these, of the Papal provinces, of the duchies, of the two Sicilies, Italy, instead of being merely a geographical expression, has been consolidated into a substantial kingdom. The public law, in reference to the Danubian Principalities, has been also modified. The most flagrant violation of the principles of Vienna legislation has undoubtedly been that exhibited by Russia herself, the prime mover in the Vienna Congress. The constitutional rights secured to Poland have been ruthlessly trodden under foot by irresponsible power, in defiance of the most positive engagements, and those principles of equity and piety so solemnly professed in the terms of the Holy Alliance. The regulations, as far as they respected France, were modified most favorably for the kingdom, by the Congress of Aix-la-Chapelle, which met in 1818, three years after that of Vienna. The whole of the foreign troops were withdrawn from France two years earlier than had been stipulated, and favorable conditions were made for the payment of the debt due to the allies.

But when we have taken full count of all the departures from the treaties of Vienna, it is still most inaccurate to suppose that they have ceased to exist. Though much has been taken, much yet remains. A law remains in force, though its definitions may be affected, and its scope and action be modified. The treaty of Westphalia was very greatly modified by subsequent treaties, such as those of Nimeguen, Ryswick, Utrecht, Paris, and Versailles, during which more than one kingdom was pulled down or set up. Yet this venerable instrument was justly re-

garded as the basis of public law in Europe till the present century, when the vast territories reclaimed from France rendered a new settlement absolutely necessary. At the present moment nearly all the sovereigns of Europe hold dominions under the tenure of the titles ratified at Vienna. So it is that the kingdom of Prussia exists. So it is that the Germanic

Confederation exists. So it is that Sweden holds Norway; Austria, Venice; England, Malta. To deny the validity of these treaties of 1815, so far as they are left unchanged by the changes of nearly half a century, is to attack the vested interests of states, and possibly to make a step toward inaugurating another era of revolutions.

From Bently's Miscellany.

THE COSSACKS.

SUWAROFF used to call the Cossacks the eye of the army. This great general of his time, and his country in particular, knew well how to make use of these irregular troops, to whom he owed a great part of his victories and their political results. Next to Suwaroff, it was General Tettenborn and Count Platoff, who, during the French war (1812-1814), did wonders of exploits with their Cossacks. The Cossack, however, of the present time is no longer the same that he was in the last, or even the beginning of the present century. His position, character, and function, have undergone material changes, and he has now become a mere sort of gendarme, to guard the frontiers of the empire, and to form a safeguard of honor to distinguished states' functionaries.

Various native writers have, within the last twenty years, expressed their regret at this derogatory character wrought in the position of the Cossack, without, however, considering that a government like the Russian, which is so notorious for its sly and calculating proceedings, must have had weighty reasons for a transformation of such an important part of the army. Nor is it so very difficult to arrive at them. The whole system of warfare had already undergone considerable changes long before railways and other easy means of transport were introduced. Individual genius and bravery no longer decided the fate of a battle, and the success depends now, more than ever, chiefly on the skill and judicious strategy of the leaders. A

great number of discoveries and inventions in the arts and sciences are now applied with destructive success to the instruments of war, against which only regular troops provided with similar means are able to cope. Indeed, even in former times, the Cossacks were but rarely, and in extreme emergency, employed against regular infantry, and hardly ever against artillery. Their chief value consists in disquieting and harassing the enemy. The Cossacks—like all Asiatic troops—show great reluctance to face the mouth of a cannon, and in the use of which they exhibit extreme clumsiness and inaptitude.

But though in a European war the Cossack is of but little use, his great importance in wars with less civilized nations remains now the same as before. Russian policy has, therefore, found it advisable to divide the whole race into two sections. The first is destined to guard—as mentioned above—the frontiers of the empire; and it has recently received such constitutional laws and regulations as to render their previous roving and marauding life of independence, a matter of absolute impossibility.

In the north of the Caucasus and Great Tartary the present Cossacks of the line still defend the southern frontier of the empire with the same success as did in the past centuries the Cossacks of the Don and Dnieper. In continual strife with the bordering Kirghisi, Circassians, and other tribes, these Cossacks of the line have acquired the habits of martial life, and have thus become very useful

guardians of the Asiatic frontiers. In the previous centuries, when they were less ruled by the state, and their existence depended to a certain extent on their own exertions, the Don and Dnieper-Cossacks usually found a safe asylum of rest and retreat in the deserted provinces along the frontiers, while at present they have their regular fortresses to retire into, which, by their proximity to each other, form a close line of defense against sudden invasion or attack by superior forces.

The other section, the descendants of the Don-Cossacks, are now stationed at the frontiers in those parts of the empire where no invasion is to be apprehended, such as Prussia, Austria, Turkey, and even Persia. Their main task and duty are, to prevent smuggling and desertion, and they perform, besides, especially in the west and south, the duties of the police, and even executioners, of the local authorities in the various provinces. Moreover, travelers of distinction and rank obtain these Cossacks as guides and guards of honor, whose duty it is to provide for those travelers post-horses, provision, and other accommodations along the route. It may easily be imagined, that by such a change in his life, position, and function, the Cossack has lost much of his national character and peculiarities, and has become a complete nonentity in European war. During the Polish revolution (1830-1831), as also in the last Crimean war, the Cossacks played but an inferior part in the various encounters, while in the wars with Turkey and Persia they proved themselves extremely useful.

The Cossack has a number of native qualities that render him very valuable in war. The sharpness of his hearing organ is not inferior to that we read of the savages in the backwoods of America. With his ear on the ground, he can distinctly hear for miles off the roaring of the cannon, and even the hoofsteps of cavalry or footsteps of infantry. When placed as forepost, his eye can discern at a great distance objects of suspicious appearance. Though they use neither drum nor trumpet, nor, in fact, any instrument of call, retreat, or alarm, they all rally at a certain point by mere signs of recognition, however much and far they may be dispersed and separated from each other. A stranger from childhood to comforts and luxury, the Cossack can bear fatigue, hardships, and sufferings without harm or injury to his

body. Like his horse, he can bear hunger and thirst for a long time, and is then perfectly satisfied with the coarsest meal. His horse is quickly saddled and bridled, and defies any surprise. The Cossack knows of no apparent obstacle that he cannot remove by some means or other. He plunges heedlessly and foolhardy into a stream on the back of his horse, and reaches the other bank with his clothes all dripping wet in pursuit of the enemy or any object in view. He assails and rushes with impetuous rapidity at the enemy, but retreats as quickly as soon as he meets with resistance. In the rapidity of his movements he resembles the Bedouin Arab, being here, there, and nowhere. No sooner has the assailed enemy made his preparations to meet him than the Cossack is already out of sight, and suddenly makes his reappearance at a spot where he is least expected. In the last French war (1812-1814), the cleverness of the Cossack in that respect even attracted the admiration of Napoleon himself, who was frequently harassed in the midst of the night by a handful of Cossacks who ventured to approach his headquarters, and were out of sight as soon as the alarm was given. With his Russian god (a different one from that of other Christians) in his heart, and his emperor in his thought, he is the blind organ of his commander, who can do with him anything he likes. Deaf to all external influences or obstacles, he most punctually and literally executes the orders of his superiors, while his vigilance has almost become proverbial. No soldier understands nocturnal marches better than the Cossack, who rests half asleep on his horse, which in its turn trots on with its eyes equally half closed with sleep. But, however indefatigable he may be in the pursuit or harassing of the enemy, he is the most idle and indolent creature on earth when far from the seat of war, when he passes the whole of his time alternately in sleeping, loud carousing, gluttony, and drunkenness. During the latter fit, all present acquaintances and strangers are obliged to share in his merriment, even those from whom he has purloined the spirits. In the house where he is billeted, he soon becomes familiar, and assists in the drudgeries of the household work. Cossacks with long beards were frequently seen playing even excellent nurses in German families abroad during their stay

in Germany; they were seen cradling, rocking, and lulling the infants to sleep, or carrying them about in their arms, and trying to pacify them by all sorts of amusements, caresses, and endearing terms. But no sooner is the Cossack removed from

the house where he has become almost one of the family, than various articles are missed in the household, which the lodger has—no doubt—appropriated to himself in his assumed title and right as a *member of the family*.

From Good Words Magazine.

O N M E M O R Y .

MITHRIDATES, King of Pontus, had an empire in which two-and-twenty languages were spoken; and it is asserted that there was not a province in which he could not administer justice, nor a subject with whom he could not converse, in his own dialect and without the aid of an interpreter. But the royal linguist was eclipsed by the late Cardinal Mezzofanti, who died as recently as 1849. This wonderful man was the son of a carpenter at Bologna, and acquired his first knowledge of the classical languages by listening to the scraps of Latin and Greek which came through the open casement of a school-room window near which he was working. To the boys inside the tasks were irksome enough, but the stolen waters were sweet to the poor lad who could not pay for such learning; and with his wonderful retention of words, and with a grammatical intuition which has never been thoroughly explained, he went on acquiring, till, at the age of seventy, he could converse in upwards of fifty languages, besides possessing some knowledge of at least twenty more. Basque is the most difficult language of Europe, but Mezzofanti was at home in both its dialects. Germans he could address either in high Saxon or in the patois respectively of Austria and the Black Forest. With Englishmen he never misapplied the sign of a tense, a feat of which few Scotchmen or Irishmen can boast. When Dr. Tholuck visited the Vatican, he was amazed at the correctness with which Mezzofanti kept up the dialogue, first in Arabic, then in Persian; and to mention nothing more, he was so far master of at least one Chinese dialect that in the College of the Propaganda he could deliver a

set speech to students from the Celestial Empire.

Of Dr. John Leyden, the distinguished Orientalist, many mnemonic feats are recorded. Amongst others, it is mentioned that, after he had gone to Calcutta, a case occurred where a great deal turned on the exact wording of an Act of Parliament, of which, however, a copy could not be found in the Presidency. Leyden, who before leaving home had had occasion to read over the Act, undertook to supply it from memory: and so accurate was his transcript, that when, nearly a year after, a printed copy was obtained from England, it was found to be identical with what Leyden had dictated.

Richard Porson had a remarkable memory. On one occasion, when some friends were assembled in Dr. Burney's house at Hammersmith, in examining some old newspapers which detailed the execution of Charles I., they came on sundry particulars which they fancied had been overlooked by Rapin and Hume; but Porson instantly repeated a long passage from Rapin, in which these circumstances were all recounted. Once when in the shop of Priestley, the bookseller, a gentleman came in and asked for a certain edition of Demosthenes; Priestley did not possess it, and as the gentleman seemed a good deal disappointed, Porson inquired whether he wished to consult any particular passage. The stranger mentioned a quotation of which he was in search, when Porson opened the Aldine edition of Demosthenes, and after turning over a few leaves, put his finger on the passage. On another occasion, calling on a friend, he found him reading Thucydides. His acquaintance

asked him the meaning of some word, when Porson immediately repeated the context. "But how do you know that it was this passage I was reading?" asked his friend. "Because," replied Porson, "the word occurs only twice in Thucydides; once on the right-hand page in the edition which you are using, and once on the left. I observed on which side you looked, and accordingly I knew to which passage you referred."

Within the range of their own experience, most of our readers must have encountered examples of ready or retentive memory. The last time that the writer visited a college cotemporary distinguished for his scholarship, he found him with a Greek Testament in his hand. On asking him if he had not got it all by heart, he replied that he scarcely thought he had; but he believed that if any phrase were given, he could tell the chapter and verse where it occurred, and repeat the context. We tried him with passages till we were wearied, but it was impossible to puzzle James Halley; and we believe that the trial might have been extended to the Greek tragedians and Homer with scarcely inferior success. A gentleman who used to attend our church once offered to repeat *verbatim* any sermon on the following day, without taking a single note: the only stipulation which he made was that he should be warned beforehand, so as to keep his attention fixed at the time. Frequently these powerful memories are filled with matters of questionable value. An appraiser, who lately lived at Hampstead, could enumerate all the shops from Temple Bar to the Pump in Aldgate; and from being able to tell all about every corner house in London, who lived in it, and what business was carried on in it, he went by the soubriquet "Memory Corner Thompson." Mr. Paxton Hood told us of a man whom he knew in London who could repeat the whole of Josephus; and William Lyon, an itinerant actor well known in Edinburgh a hundred years ago, used to gain wagers by committing to memory overnight the *Daily Advertiser*, and repeating it word for word next morning.

One of the most curious branches of geological science originated with that sagacious and accomplished man, Dr. Henry Duncan, of Ruthwell. In 1828, he observed in certain sandstones the footprints of tortoises, and following up the cue thus

furnished to a suggestive mind, the Dumfriesshire discovery has expanded into a separate little science called *Ichnology*. It amounts to this. Myriads or millions of years ago the tide was out, and the beach was smooth and soft and flat, and there fell a shower of rain and pitted the surface in a particular way: or it was hail, which made its own particular mark. Then came a little salt-water lizard, or a crab sidling along, or a frog the size of a well-fed pig, leaping and waddling by turns; and on the micaceous mud each inscribed the whole history of that day's proceedings—a little autobiography or Pilgrim's Progress in the genuine reptilian or batrachian handwriting—and there it remained till the tide gently rose and with fine sand or clay filled up the impressions. And, now that the whole is converted into rock, there comes some exploring Miller or Mantel, and turns over the stony leaves, and reads the record as plain as if it had been printed yesterday.

Many psychologists maintain that if an impression is once made upon the mind, it remains for ever. And there are certain seasons of life or certain circumstances when—if we may use the metaphor—the receiving surface is peculiarly susceptible, and when the impressions made are deep and sharp and definite. So is it in childhood and youth. The objects then familiar, and the texts, the hymns, the languages then mastered, become a life-long heritage; and like the footprints of the Cheirotherium in the sandstone of Saxony, it may have been a pulpy tablet on which they were first projected, but in the interval it has petrified and they are now engraven in the rock for ever. We might go further, and add that, on the whole, people remember the things in which they are really interested, or the things which it is very much for their advantage to remember. In the one case, like the fine mixture of argillaceous sand left by the retiring tide and ready to take in and retain the minutest traces—the mental tablet or mnemonic organ is in a state of spontaneous receptivity, and without any trouble on your part the interesting object will make its own mark, and will survive for days or years, perchance through all existence. In the other case, you have very probably to deal with a resisting recipient, but if at last you prevail, you may find him none the less a faithful conservator. The Church of Rome

has studded Europe and the Holy Land with fossil footprints—with the life-like impress, heel and toe, of saints and Scripture worthies. But although Protestantism alleges that the footmarks on St. Paul's Rock and elsewhere are more indebted to monkish tools than to miraculous sandals, there can be no doubt that now they are made they are sufficiently permanent. And as there are subjects for which our minds are not always soft and plastic, we must have recourse to the hammer and chisel. A schoolboy has no difficulty in recollecting in the month of May every bank and bush where a nest is built or in progress; and he can tell the exact number of eggs which were that morning reported in the census of ever so many separate establishments,—wrens, titmice, finches, and linnets. These facts are interesting and impress themselves. But "The verb agrees with the nominative before it in number and person"—"Nine times six are fifty-four, nine times seven are sixty-three"—although facts, important and indisputable, are not particularly captivating; and yet the ingenuous youth has an interest in retaining them. Pains and penalties are involved in forgetting them. Accordingly, by dint of diligence, he does, after a fashion, get them inscribed on the reluctant stone—chipped and chiseled into that mysterious runic pillar where, long after the statistics of birds'-nests have crumbled away, rules of syntax and multiplication tables stand forth with triumphant distinctness.

The memory may be strong where the intellect is weak; but without the former faculty there can be no intellectual growth. For, stripped of all mystery, what is memory? Is it not the mind's power of retaining its possessions? If sensation, perception, attention, are the collecting faculties, memory is, what Sir William Hamilton has called it, "the conservative faculty"—the custodian of the collected treasures. In point of fact, we know that every mind from an early period possesses this power. In virtue of it, and in union with judgment, the infant soon learns to distinguish its mother from all the world; and in virtue of it the inarticulate sages of our race—those little Pythagoreans who have not yet finished their twelve months' novitiate of silence—have laid the foundations of a most valuable experimental philosophy. They have

made the discovery and they retain the conviction that fire burns; that there is a certain point beyond which if puss's good nature is taxed it is pretty sure to give way; that, in cases of collision action and reaction being equal, it is inexpedient to butt violently against bedposts and the legs of chairs and tables. The first use of the conservative faculty is to treasure up experiences like these, just as one of the first uses of the reasoning or comparing faculty is to generalize them and draw deductions from them; and with the help of these two faculties your little philosopher on all fours has already taught himself more important lessons in the art of self-preservation than any which he will afterwards learn, even although he should attend Dr. Hassall's sanatory lectures, or study Sir John Sinclair on the Art of Longevity. If he had no memory, he would forget that the candle burnt his finger yesterday, and so he would put it into the flame this evening; if he had no judgment he would see no necessary resemblance between the red poker and the ignited gas-cone: but having both, he learns to "walk," or rather to creep, "circumspectly," and grows cautious in his dealings with cats and candles, and such other dangerous friends or open enemies.

In every sound mind, memory develops early, almost as early as the power of observation; and in the earlier stage the objects about which it is employed are in all the individuals much alike, being, in fact, those objects which are most essential to the well-being, if not the continued existence, of the youthful reminiscence. But soon, often as early as the second or third year of the history, you can discern a difference. One will show a readiness at recognizing faces, perhaps a facility in recalling names. Another will evince a talent for topography—if he has been taken once or twice to the infant school, he will find his own way ever after; whilst a bewildered companion of the same age would wander without a guide, and needs to be long kept in leading-strings. And even of the two who have got by heart the greatest store of nursery rhymes, you will find that one is rich in hymns and pensive stanzas, whilst the other has forgotten everything except comic tales and funny little couplets. That is to say, as soon as the natural disposition develops, the memory begins to discriminate. Or, putting

it another way, every mind has its own peculiar conformation or complexion, and the things of which we are fondest or for which we have the greatest affinity, are the things which we find it easiest to remember. This fondness or affinity is a sort of mental magnetism, enabling the mind to attach to itself and retain without effort congenial objects.

Giving an account of his own early days, Sir W. Scott says: "Spenser I could have read for ever; and as I had always a wonderful facility in retaining in my memory whatever verses pleased me, the quantity of Spenser's stanzas which I could repeat was really marvellous. But this memory of mine was a very fickle ally, and has through my whole life acted merely upon its own capricious motion, and might have enabled me to adopt old Beattie of Meikledale's answer, when complimented by a certain reverend divine on the strength of the same faculty: 'No, sir,' answered the borderer, 'I have no command of my memory. It only retains what hits my fancy; and probably, sir, if you were to preach to me for two hours, I should not be able when you finished to remember a word you had been saying.' My memory was precisely of the same kind; it seldom failed to preserve most tenaciously a favorite passage of poetry, a play-house ditty, or, above all, a border-raid ballad; but names, dates, and the other technicalities of history, escaped me in a most melancholy degree."

In his elegant and pleasing biography of his friend, Dr. Thomas Brown, Dr. Welsh records the remarkable ease with which as a boy he got by heart passages of poetry. The punishment for transgressing the bounds of the playground was a dose of Milton. It was a penalty which in his school-days this real "Tom Brown" frequently incurred. "I resolved, however," said his master, "to fix him for once, and gave him a task that I thought even he should not be able to get in a hurry. Soon after I was called out of the room, and to my utter astonishment when I returned, which was in a very few minutes, he came up and repeated it every word without making the slightest mistake." When the anecdote was afterwards recalled to Dr. Brown's own recollection, he said that he remembered being very impatient for his master's return, as he was ready for him some time before he made his appearance, and also mentioned

how much he was struck with the effect of the pause—

"hung over her
Enamored,"

in the description of our first parents in Paradise. Such hold had it taken on him, that a similar arrangement is continually reappearing in his own poetry.

Now, Scott and Brown were poets born. To their excited imagination, bright fancies and vivid phrases flew and clung adhesive, just as flakes of down or fibers of many-colored silk fly and adhere to the rubbed sealing-wax. To the one it was no penance to get by heart the whole of *Chevy Chase*, and to the other there would have been as little hardship in a page of Pope or Milton. It would have been very different if the task had been what a youthful Wollaston or Dalton would have very much preferred—a table of atomic weights or a list of specific gravities.

Every body has a memory, but every one has not the same natural affinities, and therefore every one does not remember with equal facility the same sort of things. One man has a turn for natural objects, and like De Candolle or Cuvier, carries in his memory myriads of plants or animals. The turn of another is more for the faces of his fellow-creatures, and, like Themistocles, he can name each one of the 20,000 of his Athenian fellow-citizens—like Cyrus, he can name every soldier in his army. A third has a propensity for languages, and, like Mezzofanti or Alexander Murray, every word he reads or hears in a foreign tongue, is a nail fastened in a sure place, and becomes a life-long fixture. And the taste of a fourth is critical; he loves diction, choice, sublime, emphatic, and like the Emperor Claudius, he can repeat the *Iliad* and *Odyssey*; like Gilbert Wakefield, he has by heart the whole of Virgil and Horace, nearly all the Bible, and the best parts of Homer and Pindar to the bargain.

These diversities have not been kept sufficiently in view in the great business of education, and the procrustean principle of cramming the same things into every sort of memory still too extensively prevails. Says his bride to Balder:

—"Try thy soul for me
With many thoughts, as fishers try a lake
With flies; it may be thou shalt find a shape

Whereunto something in thy soul shall rise,
That never yet hath risen."

No doubt, there are minds over which you may keep whisking with every sort of lure, and bring nothing to the surface. Like our gentle friend, James Wilson, who, after fishing for half a day without a nibble, in a loch in Selkirkshire, watched all the time by a south-country shepherd and his dog, was turning despondingly homeward, when the shepherd broke silence: "Ye'll no hae killed mony trouts there?" "No, we've had no sport at all." "I daresay no, for it's weel kent there was never a trout in that loch since the beginnin' o' the creation:" so it has sometimes been your lot to have a friend come in, and he sat down and showed plainly that he had come to be talked to; that is to say, as, after remarking, "A fine day," he sat resolutely silent, it became your duty, like Balder, to "try his soul with many themes;" but though you put upon the hook Lord Palmerston and the Danish duchies, the Shakspeare memorial, and the Crawley court-martial, the newest novel, and Mr. Buckland's last porpoise, you could not get a rise—there was no speech to be had of him, for there was no speculation in him. So sometimes the teacher is at his wits' end with the pupil, and declares, "There is nothing in that boy; I have tried him with Latin, with Euclid, with Modern History, but I can get nothing out of him. There is no response, nothing he remembers, nothing that he cares to know, a regular dolt, a downright dunderhead." And yet a little perseverance or a little ingenuity in the one case as in the other, might have stirred the depths, and brought a fine fish to your basket.

In 1724 there came up to the gymnasium at Wexio in Smaland a youth of seventeen, sent there to study divinity; but the tutors tried his memory with all the flies in the regular academic assortment, and found it a mighty void, an absolute *mare mortuum*: no Augsburg confession in it, no Greek, no poems of Anders Bording, no hymns of the good Bishop Kingo, nothing fit for a student to know; and acting on their report, the father was about to take home the stupid boy and apprentice him to a shoemaker, when the poor lad found an asylum with Kilian Stobæus, and, allowed to wade marshes and climb mountains to his heart's content, watching the plovers and lem-

ings, collecting insects and lichens and blossoming plants, he filled that gaunt, empty memory with the *Systema Naturæ*, and earned for the once impracticable and ignorant boy the name preëminent amongst his countrymen, Charles Linnæus, whom all the world recognises as "the immortal Swede."

So far Mr. Roebuck is right. In schools we still learn too much by rote, and we go too much by routine. Of course, we must all learn to read and write, as the prerequisites to every thing ulterior; but surely, where you have a matter-of-fact prosaic boy, without a spark of sentiment, and no more capable of discerning the beauties of style than a color-blind person is capable of enjoying the tints of the rainbow, to load his memory with long quotations from Lycidas and Addison's Cato and the Latin poets, is surely a waste, if not a cruelty: as great a frustration as is the counterpart folly which compels a girl to repeat long columns of Greek and Latin derivatives which will leave no more trace on her memory ten years hereafter than yesterday's shadow has left trace on the mountain; or strings of dates from Roman history, or pedigrees of tiresome, unmeaning French kings, Merovingian, Carlovingian, Capetian; Charles the Bald and Lewis the Stammerer, Charles the Simple and Robert the Wise, Lewis the Fat and Philip the Fair, and similar worthies who did a great deal of mischief while living, but who need not do any harm now, if it were not that their ghosts still haunt the school-room and surround with horrible associations the study of a great nation's history.

What we love we easily remember. The mind carries away and keeps the things congenial to itself; and different minds have different affinities. Reverting to a former simile: if after rubbing a stick of sealing-wax, you pass it along the table-cover or the carpet, it draws to itself feathers and little filaments of wool and flossy particles of silk. Over the same carpet or table-cover pass a magnet, and the silk and wool and feathers lie quite still—they don't care the least for his red coat and arms of steel; but if there be within reach a nail or a needle, a few filings of iron, or the key of the tea-chest, it is instantly impatient, on the move, and, rising sideways or endwise, jumps up, and only rests when itself and its attractor

cleave to one another. And even if you tried a transposition—if you laid the floss and the feathers on the magnet, and the iron chips and filings on the waxen rod, they would not adhere: the moment that you moved them they would show their faint attachment by falling off.

And so you take and move over the face of a country like France a multitude of minds. One, like Arthur Young, brings back the agricultural peculiarities—the beet culture of the Pas de Calais, the madder of Vaucluse, the chestnut crops of Ardèche, the vintages of Gironde, and Côte d'Or. Another, like Murchison or Lyall, carries off the craters of the Puy de Dome, the chalk-quarries of Paris, with their wonderful fossils; and, above all, the drift and gravel of Auvergne, with their mysterious relics of man. A third, like Sir Francis Palgrave, drops the vineyards and volcanoes as a magnet drops woolen motes or feathers, and fetches home only tapestry from Bayeux and tombstones from Rouen, and those relics of feudal Normandy which still frown upon the Seine. Passing through the same scenes, a London alderman will best remember the *dindes aux truffes* which he found native in Dordogne, or the *patés au foie gras* which made him lose the train at Strasbourg; and his daughter may be forgiven if she remembers better than either the shops of the Palais Royal, or the dress worn by the empress and her ladies on the slopes at Biarritz.

But this affinity may from time to time be intensified. By briskly rubbing your sealing-wax you may so augment its peculiar attractiveness that, held on the dusty floor, it will become a perfect mop of wool and fibers; by throwing into your bar of steel additional force, you may lift with it not only nails and needles, but the poker and the shovel. And so, those objects for which any mind has a natural liking, when that mind is in a state of exaltation or excitement, such objects will come to it and coalesce, and continue as it were part and parcel of itself in a way which languid temperaments can not conceive, and which would totally transcend the powers of the self-same mind in its ordinary condition.

Except for the mere retaining of words—a department distinct and by itself—for the power of retaining things we may safely reckon on the minds of greatest general ability. In the direction in which

the tastes or propensities of such a mind are strongest, its retentiveness will be most powerful, and its work of attaching and retaining will be easiest at such times as its energies are from any cause stimulated into their highest activity.

This energy sometimes arises spontaneously. Just as when you are taking your summer holiday—few cares upon your mind, a limpid atmosphere all round, the grass cool and springy beneath your feet, you wonder at the walks you take; twenty miles are only constitutional, and Snowdon or Helvellyn is not more formidable than you used to find Arthur's Seat or Primrose Hill. So there are times when circumstances conspire to give the mind its firmest tone and fullest action. You are listening to an orator. It is no effort to attend; his rich voice, clear utterance, and expressive action make it so easy for the hearers. And the principle which he is expounding, the truth he is enforcing is so vital; his lucid statements and happy illustrations make it all so vivid, and his close-coming earnestness brings it so thoroughly home, that your entire being is absorbed. It is no effort to attend. The effort would be to take off your thoughts and divert them to another theme. For the moment, the speaker and the subject have you in full possession. Under the induction of an earnest spirit or powerful intellect, that mind of yours is for the moment intensified, and as long as aught of the unwonted energy remains, or is revocable, the acquisition of knowledge or feeling will never entirely pass away.

But God has given us the power of energizing our own minds. At all events, we have the power of throwing into a given act or faculty, for the time being, the whole of our mental vigor; and in this way a stout will can usually insure a strong memory. For instance, a school-boy has been trifling all morning over the history of our Edward III., and though his eyes are toward the book, it is only with the edge of his mind that he is taking an occasional squint at the story; when you say to him: "Jack, if, half an hour hence, you can tell me all about it, you shall have no lessons this afternoon, and you shall have a ride on my pony," it is amazing how marbles and cricket dissolve in a moment, and how full in the foreground comes up the battle of Cressy, and over the canvas pass dioramic the Black Prince, and the *môlée*

with the King of Bohemia, and the picking up of his ostrich plume, and its transference, "Ich dien" and all, to the Prince of Wales; and then the taking of Calais, and, by-and-by, Poitiers, with the capture of poor King John, and his furlough in order to collect a ransom from his people, and his failure, and his high-minded keeping of his word of honor, and his return, to die in London. Both for apprehension at the moment and recollection afterwards, ten minutes of such concentration or energized attention are worth the longest day of dawdling or dispersive day-dreaming.

If, therefore, any one says, "I have got no memory," we answer, You are wrong. Perhaps there are subjects in which you feel no interest; but anything that attracts you, which draws you in attention toward it, or arouses the energies of your being, will impress itself upon your mind, and will engrave itself so deep as to insure its permanence. In order to have a memory for themes solid,

grave, and worthy, the grand prerequisite is a certain seriousness and elevation of mind, a certain freshness and fullness of spirit, that seriousness which deems it worth while to attend to what God is saying, and to what he has been doing, that sympathetic largeness and noble overflow of nature to which nothing is remote that is human, and nothing is trivial which contains a germ of good or evil. It is no misnomer, the old phrase which we still employ. When any one is trying to commit a thing to memory, we say that "he is getting it *by heart*." In order to have a memory for the best things, the main requisite is a right spirit. What you are fond of you don't forget, and where there is a "good and honest heart"—a moral and spiritual affinity—there is sure to be retention afterwards, and the best sign that the precious grain has sunk in and not since been snatched away, it will spring up and bear fruit, some thirty-fold, some sixty-fold, and some a hundred-fold.

JAMES HAMILTON.

From Bently's Miscellany.

A VISIT TO CHARLES DICKENS BY HANS CHRISTIAN ANDERSEN.

A FASHION introduced into this country by our American brethren appears to be spreading on the Continent. A man can hardly attain a decent amount of literary celebrity ere a chiel's among his household taking notes, and faith he'll print them. The last and most stiking instance of this nature is supplied by the Danish poet Hans Christian Andersen, who, having spent a portion of 1857 at Charles Dickens's hospitable house at Gadshill, has recently put forth his experiences among some other sketches, which go to form an unpretending volume. A scamper through the paper may afford some amusement to our readers.

M. Andersen had already visited England on several occasions, and was, therefore, bold enough to reach the Higham station alone. But no carriage was to be procured there, and hence our author ascended the hill, accompanied by a por-

ter, who carried his luggage. It must have been a charming walk through this portion of the garden of England, which never looks better than in the month of May. And here for Gadshill place itself:

"Before me lay on the broad high road Dickens's country-house, whose tower, with its gilded weathercock, I had seen for some time over the tops of the trees. It was a handsome new house, with brick walls and a projecting entrance, supported by small pillars; a thick hedge of cherry trees joined the house, in front of which was a carefully-tended grass-plot, in the rear two splendid cedar trees, whose crooked branches spread their green shade over a garden fenced in with ivy and wild grape. As I entered the house Dickens came to meet me, so happy, so cordial; he looked somewhat older than when we parted ten years before, but this was partly owing to the beard he wore; his eyes glistened as formerly, the same smile played round his

mouth, the same clear voice sounded so cheerily, even more affectionately than heretofore. Dickens was now in his best years, so youthful, lively, eloquent, and rich in humor, through which the warmest cordiality ever shone. I can not find more characteristic words to describe him than a quotation from the first letter I wrote home. 'Select the best of Charles Dickens's works, form from them the image of a man, and you have Dickens.' Just as he stood before me in the first hour, he remained unchanged during all the weeks I passed with him, ever jovial, merry, and sympathizing."

Our author had frequently heard it remarked that Agnes, in *David Copperfield*, was a likeness of Mrs. Dickens; and he believes that no other character in all his writings resembles her so much for her kindness and amiability as this very Agnes. M. Andersen found in Mrs. Dickens a calm, feminine, and retiring nature, but when she spoke, her large gentle eye assumed a peculiar brilliancy, a good-humored smile played around her mouth, and in the sound of her voice was something so attractive, that, since the meeting, M. Anderson has always imagined Agnes to himself as possessed of these attributes. Equally characteristic is the description of the room in which the family breakfasted: the large windows were festooned with fragrant roses, and the prospect was varied and extensive. A good portrait of Cromwell hung over the mantel-piece, and among the other pictures was one which our author specially noticed. It depicted a carriage, in which two ladies are seated, deep in the perusal of a copy of *Bleak House*. The little groom behind was bending forward, and eagerly reading the work.

In the letter of invitation Charles Dickens sent to Andersen, he wrote: "I have now finished *Little Dorrit*, and am a free man. We shall be always together, and play at cricket in the field." But these calculations were foiled by the death of Douglas Jerrold, and the necessary arrangements for securing the future comfort of his widow. M. Andersen furnishes a detailed account of all the performances instituted, but on which we need not dwell, as few of our readers, we trust, have forgotten the efforts made by the most eminent literary men in this most sacred cause. It, however, took Dickens more frequently than usual to London, and robbed the guest of his host's society. Very pleasant, though,

must have been their country walks, and and the philological discussions they held on the resemblance between the English and Danish languages, and of which our author gives some amusing instances. Take, for instance, the following sentence: "Der er en Græsshoppe in den Høstak," which Dickens at once translated as a "grasshopper in the haystack." Or here, again, is a pleasant sketch enough of a family group:

"More and more I felt at home; even the younger children began to understand and attach themselves to me. Dickens has no less than nine children, two grown-up daughters and seven sons. The two eldest and two youngest were at home, and the three middle boys had just returned for the holidays from Boulogne, where they were at school. I soon saw them climbing up the branches of the lofty cedars, or playing a game of cricket in the large meadow, with father and elder brothers, in shirt-sleeves; the ladies sat beneath the trees in the tall grass; peasant children peered over the hedge, and the house-dog, Turk, who was chained up the night through, was now unfastened, and led a free doggish existence, while his long iron chain and kennel were left to the care of an old raven, who certainly considered himself the Barnaby Rudge's raven of the family. That bird, by the way, might be seen in-doors, stuffed."

The dramatic entertainments necessitated a visit to the town-house in Tavistock square, which M. Andersen describes in the most enthusiastic language. A large garden, with grass-plots and tall trees, lies behind the house, and imparts a rustic character to the scene. In the passage hung pictures and copper-plate engravings; here was Dickens's bust, a capital likeness, young and handsome; and over the door leading to the sleeping apartments and the dressing-room were Thorwaldsen's bas-reliefs of "Day and Night." On the first floor was a copious library, and, in the rear of that again, the small theater where Dickens was wont to perform in the winter with his family.

There was plenty for M. Andersen to see. In the first place, the Handel Festival at the Crystal Palace, the prominent reminiscence he has borne away from which is the puffed-out crinolines of the ladies, which seemed prepared to wing their way to London like balloons. But what pleased him still more was the performance of Ristori at the Lyceum. Our author is enthusiastic in her praise, though

he also quotes the verdict of a clever lady, who said that the Ristori reminded her too greatly of the epileptic boy in Raphael's Transfiguration—one eternal ecstasy. And here for a pleasant bit of biography:

"We are aware that Ristori is the daughter of poor traveling Italian artistes, and it is also said that, when an infant, she lay behind the scenes in a basket while her mother was playing. She herself made her appearance on the boards at a very early age, in Turin; and it was here, too, that her extraordinary talent was first noticed. Presently she married an Italian noble, whose family did not like a daughter-in-law from the stage, but, by her amiability, she conquered all their hearts. When financial motives compelled her return to the stage, she was accompanied by her husband to Paris, where her greatness was speedily recognized. She alone held the sceptre of the tragic muse, and the Rachel proceeded to America. Her fame soon spread to adjacent countries, and England and Germany followed the example of France in homage and delight. Signora Ristori has a splendid theatrical figure, noble features, sparkling eyes, and a mimic which appears to me too powerful, and only permissible in the ballet, where action is employed instead of words. The transitions were so violent that only the truth of the talent rendered them pardonable. At first I could not accustom myself to them; but in the concluding scene, after she has poisoned her treacherous husband, and drunk the cup to the dregs herself, when she begs the priests to sound their harps, there was something so attractive, so affecting in her gestures, that I was forced to bend low before the might of the *tragédienne*."

More satisfactory in every respect was Ristori's reading of *Lady Macbeth*, which M. Andersen went twice to see. It affords him occasion, too, for a comparison with the performance at the Princess's, where he saw the opening night of *The Tempest*. He allows that it was incomparably fine; but he went empty away after the performance was over. Shakespeare became an illustrated petrification; the living word evaporated, the mental food was lacking; it was forgotten in gazing on the golden plate upon which it was presented. Another thing, too, that offended M. Andersen's artistic sense was the inferiority of the performers; Caliban was clever, and Ariel pretty, but that was all. Kean himself droned through the piece. To sum up in a word, M. Andersen prefers Shakespeare artistically acted in a barn to such a disappearance of

the text behind scenery. We have not space to follow M. Andersen through all the wonders of London; he is equally amazed with the Museum as with the *Times* printing office. But we must find space for one characteristic excerpt:

"The richest lady in England is Miss Burdett Coutts, to whom Dickens dedicated his *Martin Chuzzlewit*. Her fortune is said to be fabulously large, but the most glorious thing connected with it is, that she is at the same time one of the noblest and most benevolent ladies in the world; not only has she built several churches, but she provides, like a reasonable and Christian woman, for the poor, the ailing, and the oppressed; her house in London is visited by the richest and most respected persons. On my first stay at Gadshill, I met there an elderly lady dressed in black, and another younger; they remained a week there, and were most amiable, straightforward, and kind; we walked together up to the monument; I drove with them to Rochester, and when they quitted us the younger lady said that I must stay at her house when I visited London. From Dickens I learned that she was Miss Coutts; he spoke with the utmost veneration of her, and of the glorious Christian use to which she applied her enormous fortune; I should have an opportunity of seeing an English mansion appointed with all possible wealth. I visited her, and it was not the rich pictures, the bedizen language, the palatial resources, which imparted to the house grandeur and a peculiar brilliancy, but the noble, feminine, amiable Miss Coutts herself, she offered such a simple and touching contrast to her richly-attired servants. She had noticed that I had felt the cold while in the country; it was not yet thoroughly warm, hence a fire burned cheerily in my chimney. How comfortable I felt there! There were books, cozy arm-chairs, sofas, and rococo furniture, and from the windows a prospect over the garden of Piccadilly and the Green Park. Close to London are Miss Coutts's country-house and garden; here are long alleys of rhododendrons, which shook their blue petals over the carriage in which I was seated; here were magnificent cedars and rare exotics, while the hot-houses were filled with tropical vegetation. From all these splendors the owner led me to a small kitchen-garden, where she seemed fondest of being; it seemed as if these plants, which possessed such value for the poor, harmonized best with her nature."

Another very pleasant house M. Andersen visited was that of the publisher of the English version of the *Improvisatore*, where he was treated with the utmost kindness by both the parents and the children. Here he found pleasant glances, listened to music, and felt himself comprehended and happy. It was

quite refreshing to go to Mr. Bentley's house from the heated, noisy capital of the world. But his heart ever fondly turned to the quiet evenings at Gadshill. How pleasant it was to ascend the hill from the station, having the brilliantly-lighted windows ever in view, and the sound of music as a guide! Miss Mary Dickens and her aunt played passages from Beethoven, Mozart, or Mendelssohn. It was a happy party round the piano-forte when Dickens and his wife and the guests sat gossiping; presently, too, a moonlight walk through the fields, which caused M. Andersen to feel melancholy at the thought that he must ever quit such friends. One evening when undergoing these feelings, Dickens suddenly seized his hand, and begged him in the most cordial manner to remain with them a few days longer, to witness the dramatic representation he was about giving with his family. There was such heartiness in the invitation that M. Andersen could not but accept it, and his good spirits returned with a confidential chat with Dickens. Every one who enters his presence feels and knows that the expression in his eyes arouses confidence and devotion. Here is an instance:

"The old farmer, whose cows and sheep grazed round the monument on Gadshill, knew that I was living with Dickens, and told me that he would bring us fresh bread every day. 'They are splendid people,' he said; 'that can be seen at once in both of them, man and wife.' They had both spoken so openly and heartily with him, they had quite won him. 'Yes,' the farmer continued, 'a few years ago the lady who is called the Swedish Nightingale, lived close by. She was just as kind and straightforward as Charles Dickens.' I sought the house where Jenny Lind was stated to have lived; the windows were plastered over, the door was bolted, the cage was empty, the nightingale had flown. Many thoughts and old recollections were aroused, and I could never pass the house hereafter without being affected by a peculiar feeling of melancholy."

But the time was approaching for the departure from Gadshill and Dickens; but M. Andersen was still to enjoy the opportunity of admiring in his host the great actor. The Queen expressed a desire to witness a private representation of *The Frozen Deep* at the Gallery of Illustration, and our author had the rare distinction of being present. The royal party also comprised the Prince of Prussia and the King of Belgium. The party

from Gadshill were accidentally prevented from proceeding to London by the last train on the Sunday night, and thus escaped a terrible tragedy. A collision took place, costing a heavy number of lives; and M. Andersen says he shall not easily forget the feeling aroused by passing over the site of the accident in the very first train that ran.

The Gallery of Illustration was decorated with flowers and carpets in honor of the royal visit, and a special buffet for refreshments was put up. We need not dwell on M. Andersen's analysis of the piece, which is familiar to all of us, but we will quote his description of Charles Dickens's acting as confirmatory of the prevailing opinion:

"Dickens performed the character of Richard with affecting truth and great dramatic geniality; he also acted with a quiet and naturalness which differed greatly from the usual way of performing tragedy in England and France. In my fatherland he would have gained admiration and recognition, even had the fact been known that he was the great author; in many respects he resembled the Danish actor Michael Weihe. In the same piece performed with Dickens his two daughters, his eldest son, his two sisters-in-law, and his brother Alfred. The writer of the play undertook the character of Frank Aldersby. The performance before her Majesty was concluded by a farce, *Two o'Clock in the Morning*. It was acted with incomparable animation and sparkling humor by Charles Dickens and Mark Lemon, the editor of *Punch*. These two also played the principal parts at the public performance in the farce of *Uncle John*. Dickens was as admirable in comedy as in tragedy, and is indubitably one of the first dramatic artists of our age."

After the first performance all the actors and assistants assembled at the *Household Words* office to spend a jolly evening: there was abundance of fun and sparkling humor, and the festival was followed a few days later by a picnic party at the house of Albert Smith. The days passed only too rapidly for our author at Dickens's residence. The parting morning arrived, and M. Andersen could delay no longer, as he was invited to Weimar to the unveiling of the statues of Goethe, Schiller, and Wieland. "From the land of Shakspeare, from the home of Dickens, he was proceeding to the country of the Minnesänger and the poetic capital of Weimar." Dickens had his horse put to, and himself drove M. Andersen to Maidstone, whence he would proceed by train

to Folkestone. They had thus an opportunity of spending two more hours together amid the richest landscapes of Kent: they rattled past rich fields and glorious woods. Dickens was as hearty and lively as ever, but M. Andersen could not overcome the melancholy feeling which preyed upon him as he felt the hour of parting approach. In the station they shook hands for the last time, and our author gazed in the honest, soul-full eyes

of one in whom he admires the poet and loves the man.

In conclusion, we think it is but fair to say that the volume from which we have borrowed these extracts contains some very charming stories told in Hans Christian Andersen's best manner. Although we do not approve of the way in which he has betrayed private confidence, possibly the other contents of the volume will condone for this.

From the Leisure Hour.

THE DEATH-BED OF A LION.

EVERY one may not be scientific; but every one may at least be a close observer of nature animate and nature inanimate. If plain people with good eyes and open hearts would but keep a note-book for their original observations, and jot down in few words the simple facts of life among God's lower creatures, the great men of the day would always have a good store of fine materials to deal with. The philosopher would stand at ease on the grand platform of truth, and build with stones ready hewn to his hand, instead of having to send his thoughts wide over the land in search of straw wherewith to make brick for the house of his wisdom, or perhaps, to gather osiers for the wattled wigwam of a nomadic theory.

"Do animals understand what death is? Do they recognize its coming signs?" asks the uninitiated. "No," says a gifted philosopher of our acquaintance, "you never see animals apprehending the meaning of death." Very well: then here is a fact.

The writer once strayed into a menagerie in the north of England, which had camped for a day or two in a little mountain metropolis. A large elderly lion was making an involuntary tour of the country in company with his wife and a fine family of young people. What an insult to put the desert monarch into such a vulgar clap-trap traveling carriage as this! The name caravan may sound fine enough out on the pathless sands; but here it is

a thing of creaking boards, groaning wheels, and red and yellow paint. No group of palm-trees here; yet the caravan stops, and the camp is pitched in the form of a hollow square, amidst much desert talk, loud roars of satisfaction, growling comment, or shrill protest. One does not know what it all means—foreign tongues all of them. But one may guess at the subjects under remark; for great lumbering bones are sorely aching with jolting over rough roads; long limbs are tired of being cramped in narrow cells; soft sides are bruised with bumping over the stones of civilized travel; the Bajazets of the wilderness are chafing within their bars; strength and ferocity are fermenting for want of space; and the dinner-hour has long ago passed away without the dinner. True, there are strong signs of supper in one of the carriages, whose little pipe of a chimney has been smoking all day, but which is fierce now. There is an aggravating afflatus of frying bacon pervading the place; and women in jackets, short flounced dresses, and laced leather boots, are clattering amongst tea-cups; while bold children with unkempt hair are talking low traveled wit to the gaping boys and girls who surround the step-ladder which acts stair-case to the lofty door. A platform is now thrown out from the front of the square; prodigious portraits of impossible monsters are unrolled and affixed; and, as if stimulated by the unheard-of dangers with which they threaten society,

crowds are daring enough to mount the steps. We slip with a vague feeling of awe behind the arras, and look around. An elephant with a hill of dun-colored forehead, and with legs like pillars of Hercules, is swaying his significant trunk this way and that, over a stockade of bars. But what is the matter with that grand old lion? He is in pain; surely he is in pain. His breathing is short, and is drawn with effort; nostrils are spread wide, lips drawn back, and that great shaggy chest heaves uneasily. He is suffering from bronchitis, for he evidently can not bear the keen air of the north. He is *couchant*; but now he lifts his head high, and looks round and round the show into the hundred faces of that unfeeling crowd, as if searching for sympathy. But no; they can not read his eye of mute appeal; he is nothing to them but a great tawny lion with a shaggy mane and tufted tail. Suddenly he rears himself up to his full stature, throws back his grand head, utters a tremendous desert roar, and falls down heavily on his side—dead. Dead: but with an imperial gesture, such as Cæsar's when he fell.

Look at the widow! She has been taking short and stately turns up and down the den—a very Juno in her gait, and in

her temper too. But she stops, looks inquiringly at the prostrate figure, draws nearer, bends her head with an anxious bewildered look, and then, as if at last receiving the great idea, she throws herself down upon the dead monarch with grand abandonment. Presently, up comes the heir; crown prince he *was*—he is the young king *now*. He stops short, in a fierce, brusque attitude, spreads his nostrils, flashes his eyes, and snorts aloud. That was a long and searching gaze, truly! But at last he, too, flings himself down, with a great sounding *flop*, upon the dead body of the old lion. Up comes the coarse-looking keeper, and flogs away the widow and the son. But they watch their opportunity, stalk forward again, and throw themselves down in the same attitude of grief. Again the hateful whip, and again they spring to the further end of the den with a short, impatient roar. Three times did this take place, and three times did they return to the same position, abandoning themselves to the same eloquent symbols of grief. Not many can say that they have been present at the death-bed of a lion; and never can the scene, so touching, and yet so grand, be forgotten by the writer.

BIOGRAPHICAL SKETCH OF CHARLES DICKENS.

IN comparatively recent years two names have come to stand out prominently on the high places of English literature. They are names of renown in the world of letters. The contributions from their pens have been rich, vast, and varied. They were peers and friendly rivals for fame in the world of fiction. The English and American reading public have long been familiar with the names of Thackeray and Dickens. Both have visited the United States and been greeted and welcomed by many admirers of their genius. Both pursued the race and fought the battle of life side by side together till within a few short months. One has fallen suddenly, the other moves on still in his brilliant career. A bright radiance marks the spot where Thackeray disappeared. One lives: the other is not. The

works of both will long live on the pages of English literature. As their names stand together on the roll of fame, we have thought it an acceptable service to place their portraits side by side as a welcome embellishment of our present number. It may afford a pleasant impression to many minds to view both their faces in the same field of vision. We have the best reasons to believe in their entire accuracy. The lineaments of their faces will speak for themselves. Both are too well known to need extended mention on these pages. The tender and touching "In Memoriam" of Mr. Dickens, of his friend, will be read with interest. A brief biographical sketch of each will not be out of place.

CHARLES DICKENS was born in 1812 at Portsmouth, where his father, Mr. John

Dickens, who held a situation in the Navy Pay department, was at that time stationed. The duties of his situation led Mr. John Dickens to reside at various naval ports; and a portion of his distinguished son's childhood was thus spent at Chatham—and perhaps early recollections as well as literary associations may have had their influence in leading to his purchase of a property at Gadshill in that neighborhood (the veritable "Gadshill" of Falstaff's adventures in *Henry IV.*) as his permanent place of residence (1856.) Retiring on a pension shortly after the conclusion of the war in 1815, the father of the novelist became connected as a reporter with the London press. Intending his son for the profession of an attorney, he placed him in an attorney's office for that purpose; and here Mr. Dickens acquired experience in life which he has since turned to account. An early passion for literature, however—a passion which he was in the habit of gratifying by abundant reading, more especially in the works of the English novelists and dramatists—rendered him unwilling to remain in the destined profession; and his father's connections enabled him to exchange it for that of a newspaper critic and reporter. His first engagement was on the *True Sun*; from which he transferred his services to the *Morning Chronicle*, then almost the leading daily newspaper in London. His abilities as a reporter and describer of scenes of city-life soon raised him high in the staff of this journal; and probably there could have been no better training for his peculiar talents of observation, whether of scenes or of physiognomies and characters, than his occupation as a reporter afforded him. His *début* as a literary artist was made in the columns of the *Morning Chronicle*, to the evening edition of which he contributed those *Sketches of Life and Character*, which were afterwards (1836) published collectively in two volumes under the title of *Sketches by Boz*. Almost simultaneously with the *Sketches* Mr. Dickens published *The Village Coquettes: a Comic Opera*. The success of the *Sketches* was so great, and they showed the possession of such an original vein of humorous narrative and description, that the late Mr. Hall, of the firm of Chapman & Hall, London publishers, proposed to Mr. Dickens to write a story, in the same vein, to be brought out in monthly parts. Mr.

Hall, we believe, even suggested as a suitable plan for such a story, that of describing the meetings and adventures of a club of originals. Acting on this hint, though he soon dropped the machinery of a club, or made it subordinate, Mr. Dickens produced his world-famous *Pickwick Papers*, published in 1837. The success was beyond all calculation; and Mr. Dickens—who about this time married the daughter of Mr. George Hogarth, a music writer and critic of eminence—at once took his place, at the age of twenty-five, as the most popular novelist of the day. *Oliver Twist*, a novel in three volumes, was his next publication; contemporaneous with which were *The Memoirs of Joseph Grimaldi*, edited by Boz, in two volumes. Then, in the same serial form as *Pickwick*, came *The Life and Adventures of Nicholas Nickleby*; followed by *Master Humphrey's Clock*, published in weekly numbers in 1840 and 1841, and containing the stories since known separately as *The Old Curiosity Shop* and *Barnaby Rudge: a Tale of the Riots of 1780*. After the conclusion of this publication Mr. Dickens visited America, where he was received with enthusiasm. His impressions of America and the Americans he published on his return in his *American Notes for General Circulation* (1842.) In 1843 was written his little Christmas book, entitled *A Christmas Carol*—the first of that series of beautiful Christmas stories with which he has from time to time varied his larger publications.

In 1844 appeared, as a monthly serial, *The Life and Adventures of Martin Chuzzlewit*; and in the same year he visited Italy and resided there for some time. His second Christmas book, *The Chimes*, appeared in 1845. On January 1st, 1846, Mr. Dickens presented himself in a new capacity, as the chief editor of the *Daily News*, then organized as a liberal morning newspaper, with a numerous staff of select writers to support it by their united talents. Here appeared Mr. Dickens's *Pictures of Italy*, afterwards published collectively. After some time, however, Mr. Dickens resigned his editorship, and the organization of the paper was changed. The same year saw the publication of his *Battle of Life: a Love Story*, and *The Cricket on the Hearth: a Fairy Tale for Christmas*. His next venture was his *Dealings with the Firm of Dombey & Son*, commenced in the favorite form of a monthly serial in

1847, and finished in 1848, in time to permit the publication of a Christmas story for that year, called *The Haunted Man and the Ghost's Bargain*. Next came the *History of David Copperfield*, in numbers, concluded in 1850. In this year Mr. Dickens started the weekly literary periodical, which he has since conducted under the title of *Household Words*, and his own contributions to which during so many years must of themselves amount to a considerable body of literature. Here appeared his *Child's History of England*, since republished in three volumes (1852-53), and the powerful story called *Hard Times*, since republished in one volume. In 1853 was concluded another of his larger serial stories, *Bleak House*, and in 1856 *Little Dorrit*.

Any commentary on the genius of a

writer, whose works are so well known as those of Mr. Dickens, is here unnecessary. Wherever the English language is spoken or read his name is a "household word;" of many of his works there are translations into the chief European languages; and, though English literature should go on increasing for centuries to come, his place in it is secure. Mr. Dickens's voluminousness as an author is also to be noted. Nor is it only as an author that he impresses his contemporaries. He is known as a man taking a lively interest in many social and philanthropic questions, and proving the same by his public conduct, as well as by the zealous criticisms of social wrongs and abuses with which his books abound, and which he has on many occasions enforced with great effect by his speeches on public occasions.

BIOGRAPHICAL SKETCH OF WILLIAM MAKEPEACE THACKERAY.

THE recent lamented death of this celebrated man and author has given fresh interest in the public mind to his person and history. Next to seeing the face of a renowned man is the sight of an accurate portrait engraving. As Mr. Thackeray and Charles Dickens were warm personal friends in life, now that one of them has gone to his rest in the grave, and the living will see his face no more, we have thought to please many of their mutual friends and admirers by placing their portraits together at the head of our present number. We add to several articles, one of which is the "In Memoriam" of Mr. Dickens on the death of Mr. Thackeray, a brief biographical sketch, which is all that can be needed for one so well known.

WILLIAM MAKEPEACE THACKERAY was born in 1811, at Calcutta. His father, the son of the Rev. Richard Thackeray, of Hadley, in Middlesex, was of an old Yorkshire family, and held a situation in the East India Company's civil service; his mother was, we believe, of Welsh descent. Mr. Thackeray was educated at Cambridge about the same time as the

poet Tennyson, the late J. M. Kemble, and others since distinguished in various walks; but he left the university without taking a degree. He inherited a good fortune on coming of age; and his intention at first was to be an artist. In the course of his education for this profession, he visited Italy and other parts of the continent in his youth; and in Mr. Lewis's *Life of Goethe* is a very interesting letter written by Mr. Thackeray to the author, in which he gives an account of his residence for a time, with other young Englishmen, at Weimar, and of his reminiscences of Goethe, with some of the members of whose family he was on terms of intimacy. Recollections of his young artist-life are also to be found interwoven into his fictions; but, with the exception of the admirable illustrations executed by his own pencil for many of his writings, he has not given the world the means of judging what success he might have attained had he continued his devotion to art as a profession. It seems to have been between his twenty-fifth and thirtieth years that he abandoned the idea of becoming an artist and adopted the life of a man of letters. Although from the

very first he exhibited those peculiar faculties as a writer which have latterly secured him his extraordinary reputation and influence, his progress toward popularity, or even toward general recognition, was slow. He is said to have written for the *Times* during the editorship of Barnes; and it is certain that he was connected with other London journals at different periods. It was in *Fraser's Magazine*, however, that he worked his way into the esteem of those who were capable of discerning an original talent in brief magazine papers, and of inferring what it could accomplish when exercised on a large scale. Under the characteristic pseudonym of Michael Angelo Titmarsh, he wrote, for a series of years, tales, essays, and sketches for this magazine, all distinguished by shrewd observation, exquisite style, and the play of keen wit and delicate irony over a hard and subtle philosophic meaning. What perhaps accelerated Mr. Thackeray's progress toward recognition was his becoming a contributor to *Punch*. His first papers there were those bearing the signature of The Fat Contributor; and these were followed by others, characterized by wit and satire of the finest and purest vein, and some of which — such as *Jeames's Diary* and *The Snob Papers* — attained an independent reputation and greatly enhanced the character of the periodical in which they appeared. Not a few of his contributions to *Punch* were in verse. Meanwhile, Mr. Thackeray was publishing also, in a separate form, both new works and reprints. In 1846 appeared his *Notes of a Journey from Cornhill to Grand Cairo by way of Lisbon, Athens, Constantinople, and Jerusalem*, by M. A. Titmarsh (these "notes" being the result of an actual journey undertaken for the benefit of his health); in 1847, he published a short Christmas-book, called *Mrs. Perkins's Ball*; and at the same time (1846-48) he was writing and publishing in monthly numbers, after the fashion of which Dickens had set the example, his celebrated *Vanity Fair: a Novel without a Hero: with illustrations on steel and wood by the author*. At the time when the first few numbers of this novel were appearing, Mr. Thackeray's name was still scarcely known to the general public; but before the novel was finished, it was widely diffused, and then began that as-

sociation of the names of Thackeray and Dickens as the two rival novelists of the day, and that discussion in literary circles of the relative merits of their respective styles and methods, which has continued ever since. In 1851 appeared *The Kickler-burys on the Rhine*, on the publication of which a critic in the *Times* took the opportunity of repeating against Mr. Thackeray the charges already common in the critical world, that he delighted in representing the ugly side of human nature, and seemed skeptical of the existence of amiability or real virtue in the world. This drew forth from Mr. Thackeray a very pungent reply in the form of an *Essay on Thunder and Small Beer*, prefixed to the second edition of the sketch in question. Perhaps a more efficient answer to the charges above indicated was furnished by Mr. Thackeray in his *History of Henry Esmond, Esq., written by himself*, published, not serially, but entire in three volumes, in 1852. This beautiful and very peculiar novel, though deficient in some of the elements of popular interest, gave a new idea of the author's powers of conception and style. The scene being laid in the time of Queen Anne, and Addison, Steele, and other wits of the time being introduced as characters, the author had been obliged, in preparing the novel, to make the social manners and the conspicuous men of Queen Anne's reign a subject of historical study; and out of these researches arose his *Lectures on the English Humorists of the Eighteenth Century*, which were first delivered in Willis's Rooms, in London, before a very brilliant audience, in the summer of 1851, afterward in the provinces, and finally in America, where the author spent some months for the purpose, and was very heartily received. The *Lectures* were published in 1853. Mr. Thackeray's subsequent publications have been his third serial work of fiction, *The Newcomes*, and *The Rose and the Ring*; or, *The History of Prince Giglio and Prince Bulbo*, 1855. Mr. Thackeray's next literary appearance was in his lectures on *The Four Georges*, delivered first in America, to which he paid a second visit for the purpose, in 1855-56, and, upon his return, in Edinburgh, London, and other cities and towns in England and Scotland. Altogether, Mr. Thackeray stood conspicuous among those who are the admitted chiefs of British literature at the

present day; and the question, still debated, as between him and Dickens, is, in the main, a question as between two styles or theories of the art of prose fic-

tion. In person, Mr. Thackeray was a somewhat large and tall man; with a fine head, the hair of which was prematurely white.

From Chambers's Journal.

THE DISPERSION OF SEEDS.

It must be obvious that the immense quantity of seed which plants generally produce could never germinate in their immediate neighborhood, and, therefore, as the seed ripens, the pericarp or seed-vessel gradually assumes such an organization as is calculated to effect its dispersion or removal to a more distant locality. The dissemination of seed is, therefore, the result of the peculiar organization of the seed-vessel, rather than of the seed itself, which seed-vessel presents some of the most interesting and beautiful contrivances in nature.

Sometimes the pericarp (Greek *peri*, around, and *karpós*, fruit) opens elastically with a spring-like mechanism, and discharges the seed contained in its cavity to a considerable distance. The seeds of the castor-oil plant, of the common garden balsam, and of the common furze or whin-bush of Europe, are separated from their pericarps in this manner. In *Hura crepitans*, a plant belonging to the natural order *Euphorbiaceæ*, or the Spurge family, which grows in the West Indies and in South America, the seeds are projected from the strong, bony envelope of the pericarp as soon as it opens, which it does with immense force, and with a report as loud as a pistol. The bursting of seed-vessels in this manner is due entirely to mechanical causes, and attributable to the state of the tissues, which, possessing unequal power of imbibition and unequal elasticity, are torn apart. It is a case of what is called in common language "warping," and can scarcely be regarded as vital phenomena, being a definite mode of destruction of dead structures resulting from special structural conditions.

The pericarps of the thistle and dandelion, and other species of *Compositæ*,

have attached to them a beautiful stellate down, contrivances which are evidently intended to catch the wind, and by means of which they are removed, when fully ripe, from off the surface of the receptacle of these plants, and wafted to a distance, to spots favorable to their germination. The pericarps to which these appendages are attached will sometimes travel for miles, until a shower of rain or a humid atmosphere causes the tuft to collapse, when the pericarp falls to the ground. In some instances, as in the thistle, this down projects directly from the surface of the pericarp, like the feathers of a shuttlecock; in the dandelion and goatsbeard, it is supported upon a stalk, which elevates it above that surface. In the last plant, each fine hair of the tuft is itself a feather, forming altogether one of the most elegant and perfect of objects. The cryptogamous or flowerless plants, as ferns and mosses, have a very extensive geographical diffusion. Their spores are so light and microscopic, that they rise in the atmosphere, and are conveyed over the ocean by currents of air. Hence many genera, and even species of moss and fern, are common to North America and Europe. In other species, the pericarps are furnished with hooked hairs, as in galium and burdock, by means of which they cling to the bodies of men and animals, and are thus scattered far and wide. It is impossible to traverse the woods or marshes in autumn without having such pericarps forced upon our attention. The achenia or horny indehiscent pericarps of *Bidens bipinnata*, or the Spanish needles, are especially troublesome. The achenia of this plant are surmounted with three or four persistent awns, which are downwardly barbed, and by means of which

they very readily adhere to the dress of the traveler. How little are persons aware, when they brush off these troublesome intruders, in some distant locality to which they have unwillingly carried them, that they are fulfilling the grand and secret purposes of nature!

Occasionally, as in the *Asclepias*, or milkweed, and the *Epilobium*, or willow-herb, the seeds themselves are furnished with these coma or tufts of hairs, by means of which, on the opening of the pericarp, they are lifted by the wind out of its cavity, and carried away sometimes to a great distance from the parent plants.

Birds, too, are important agents in the diffusion of seeds. It is well known that the seeds of numerous berries and small fruits will grow, though they may have passed through the bodies of birds. Many of the omnivorous kinds—for instance, the thrushes—migrate from north or south in autumn, at the time when berries and similar fruits are ripe, and they often void the seeds of these fruits little altered. It is in this way that *Phytolacca decandra*, or the common pokeweed, appears to have been dispersed over the whole of North America. The berries of this plant are eaten by the robin, the thrush, the wild pigeon, and many other birds, which thus carry them hundreds of miles from the plant which produced them. In this manner we can account for a fact which every practical botanist and observer of nature must have noticed—namely, the sudden appearance of a single plant in a place where its species was entirely unknown before.

The mistletoe bears a small white berry with an extremely viscid pulp. The birds fond of this fruit encumber their bills with this glutinous substance, and, to clean them, they rub them on the branches of the trees on which they may chance to alight, thus depositing the seeds in the very place where nature intended they should grow.

The heavy seeds of the oak, walnut, and chestnut, too large for distribution by the feathered tribes, are buried by squirrels, which have to make their home upon them. One day, taking a walk in the woods, our attention was attracted to a squirrel which sat very composedly upon the ground. We stopped to observe his motions for a few minutes; almost immediately, he darted to the top of a noble oak; in an instant he was down again

with an acorn in his mouth; and after finding a soft spot, he quickly dug a small hole, and deposited his charge, the germ of a future oak, covered it up, and then darted up the tree again. In a moment he was down with another, which he buried in the same manner, and in this way he continued to labor as long as we thought proper to watch him. The instinct of this little animal doubtless induced him to bury these acorns as a provision for his future wants; but such is his activity and untiring industry, that he buries more than he consumes, and the surplus rises as trees, to adorn and enrich the earth.

Some pericarps are conveyed by the rivers into which they fall, or by the waves of the ocean, many hundreds or thousands of miles away from the countries which originally produced them. In this manner, many of the native plants of France, Spain, and other adjacent countries have been naturalized in England; and the pericarps of tropical climates are conveyed to the coasts of Norway and Scotland. The foreign pericarps which are annually left on the Norway coast, are principally cashew-nuts, bottle-gourds, cocoa-nuts, and the fruit of the dogwood-tree. These are often in so recent a state that they would unquestionably vegetate were the climate favorable to their growth and existence. When carried to countries better suited to their nature, they germinate, and colonize with a new race of vegetables the land on which the ocean has cast them. In this manner it is that the coral islands, as soon as they appear above the waves of the Pacific, are speedily covered with a crop of luxuriant vegetation. The cocoa-nut is well adapted for this purpose, as it grows luxuriantly in salt water, and it is probably the first arborescent species which vegetates on these newly-formed lands. Icebergs probably have some share in diffusing plants, since they are often found loaded with masses of earth containing seeds, which they occasionally cast upon strange shores. There is every reason to believe that this kind of influence was far more actively at work in the geological period immediately preceding the present.

Most of the seeds thus carried abroad never germinate at all, as they either fall into situations unfavorable to their growth or upon a soil which is already preoccupied by other plants. All the plants of a

given district may be regarded as at war with each other. The arborescent species prevent, by the extent of soil which they occupy, the vegetation of species of an humbler growth. Each has to struggle into existence against a host of competitors; for nature, although she has been prolific of the seeds of life, has limited the supply of room and food. A number of ferns, for example, which may be growing on a hillside, will, by their preoccupation of the soil, successfully maintain their ground against all other intruders for ages, notwithstanding the facilities afforded to other plants for the dispersion of their seeds. If any chance seed should be borne to this spot by any of the agencies which we have enumerated, or by other causes, it cannot germinate among them, as they absorb all the food from the soil.

The seeds which have been thus unfavorably located retain their vitality for a longer or shorter period of time; such as have very thin and delicate integuments will lose their germinating power after a few weeks' exposure; so also oleaginous seeds will in general decay much sooner than such as contain albumen. Other seeds, on the contrary, will retain their vitality for an indefinite period of time; this is the case with plants belonging to the natural order *Leguminosæ*, or the pea family, the seeds of which may be kept for years without any material detriment to their germinating power. Pease taken from the herbarium of Tournefort, where they had remained for more than one hundred years, were made to germinate in the botanical gardens of Paris.

Those changes by which the ovule is metamorphosed into the mature seed appear to be all made with a special reference to any mishaps which may befall it when thrown on the charity and care of nature by the parent plant, as well as to provide it with a store of nutriment on which it may subsist during the early stages of its development.

When the plant approaches the close of its allotted period of life, it is surprising with what care provision has been made for the continuation of the species, as if nature had determined to secure it, if possible, an immortality of existence upon the earth's surface. Hence not only the beautiful contrivances to effect the removal of the seed to spots favorable for its germination, but also the immense quan-

tity of seed which the dying plant produces. On a specimen of *Ricinus communis*, the castor-oil plant, which the writer cultivated in his garden in Philadelphia, he counted ten clusters of pericarps or seed-vessels; each cluster produced upwards of fifty pericarps, and each pericarp contained three seeds. The total number of seeds produced by the plant was therefore $10 \times 50 \times 3 = 1500$. Each of these seeds, be it remembered, contained within its folds an incipient repetition of the parent plant in the form of a young embryo. Supposing each seed to germinate, and the plants to arrive at maturity, the product of the next season would be $1500 \times 1500 = 2,250,000$ seeds. In other plants, the first crop of seeds is still greater. It has been calculated that the sunflower produces 4000, and a single thistle 24,000 seeds the first year; therefore, the second year's crop would amount to 16,000,000 of seeds in the former, and 576,000,000 of seeds in the latter instance. How immense the amount of vegetable life which may spring from a single seed! Happily for mankind, every vegetable embryo is not destined to give rise to a future progeny. Millions of seeds or vegetable embryos are annually called into existence, but a variety of causes destroy their incipient life. Many seeds are used as food by animals, and a great many more decay. Were it not for the operation of these causes, by which the species is kept within prescribed limits, such is the fecundity of nature that there can be no doubt that the seed from a single thistle or dandelion would, in the course of a few years, be sufficient to cover with plants not only every square inch of the superficies of our own world, but the entire surface of every other planet in the solar system!

But although nature has been thus careful to insure a repetition of their beautiful and evanescent forms, all plants multiply within prescribed limits which they can not pass; fecundity is therefore no barrier to the variety which every where prevails, which is the principal charm of the vegetable creation, and from which we derive so much instruction in the study of their individual forms.

When, however, the seed falls into a soil favorable to its germination, it will grow and become a plant, running through all the phases of the vegetation of its predecessor.

From the London Standard.

"OVERFLOWN WITH A FLOOD."

SINCE the sun went down on Friday, the tragedy of Holmfirth has been reproduced on an enlarged scale in the neighborhood of Sheffield. A Yorkshire valley has indeed been converted into a vale of tears, and the homes of industrious multitudes have been swept away as completely as the dwellings of the ancients referred to by the Temanite—"which were cut down out of time, whose foundation was overflown with a flood." Who that strolled along the sides of the Loxley and Stannington Hills a few days ago, and marked the placid and picturesque appearance of the huge artificial lake, could have conceived that these quiet waters were destined shortly to devastate the smiling valley beneath, and to emulate the horrors of the primeval deluge?

The hills formed two sides of a triangle, the base of which was supplied by an immense artificial mound, forty feet thick, more than eighty feet high, and three hundred yards long. An area of seventy-six acres was thus enclosed, capable of holding one hundred and fourteen millions of cubic feet of water. At the time of the catastrophe it was not quite full. Estimating the contents on Friday night as equal to one hundred millions of cubic feet, we have a quantity exceeding six hundred millions of gallons. Our standard for the imperial pound avoirdupois is obtained from the gallon of water, which is known to weigh ten pounds. Hence six thousand millions of pounds may represent the dead weight of the water in the Bradfield reservoir at the time to which we now refer. Even with these enormous figures before him the uninitiated reader would scarcely conceive the prodigious pressure which was every moment bearing against the gigantic dyke, which alone held back the artificial flood from deluging the adjacent valley. To add to the peril the wind blew fiercely, and dashed the imprisoned waters against the dam, which thus had to bear more than the simple pressure due to the immense weight

of the water. The reservoir stood at the head of a deep gorge, spreading downward toward the populous town of Sheffield, and thickly dotted with factories, forges, and dwellings. Thousands of the adjacent population lay down to sleep that night in as much peril as if Vesuvius itself had formed one of the Penine range, and was ready to burst into one of its wildest eruptions.

Was there no indication of the impending catastrophe? It is not customary to Providence to allow its creatures to be slain without a note of warning. A portentous hush precedes the earthquake. The little cloud is the herald of the approaching storm. In the infancy of science Heaven often interposed to warn mankind by revelation. The voice of the prophet was heard for many years before the fountains of the great deep were broken up and the windows of heaven were opened. Angels came to Sodom on the evening before that terrible sunrise, when the blue heavens rained fire. The handwriting appeared on the wall of the Chaldean palace, before the army of the Persian entered. The ancient superstition of omens was not without a substratum of truth, however deeply overlaid with folly and fraud. In modern times, when miracles cease, nature is made to speak, and the falling quick-silver tells us of storms and tempest as surely as an angel-voice from heaven. Was there no warning, then, in the valley of Sheffield on Friday night? A whisper went forth that all was not right. At dusk there came friendly messages to many a cottage door, saying that the dam was not sound. Hundreds were thus warned in time, and by a prudent retreat secured their lives. Late in the afternoon a young farmer, going to fodder his cattle, saw an ugly crack in the very centre of the embankment. The "letting out of water" has been a proverb of peril of ages. The young agriculturist expressed his fears to one of the officials. Workmen were hastily fetched,

and measures were at once improvised to prevent any outbreak of the waters. Shortly before midnight the workmen on the embankment finished the task assigned to them; but efforts were still made by another party to lower the depth of water in the reservoir by drawing off as much as was practicable into another channel. Preparations were made for blowing up a weir, so as to make another outlet for the flood. A body of navvies were drilling holes in a rock for this purpose, when it is said there came a furious gust of wind, shaking the cottage of a laborer on the margin of the dam. The man's wife looked apprehensively out of the windows, and saw the foaming flood leaping through the earthly barrier, while a terrific and confused roar, like the din of the heaviest thunder, made known that the giant flood was hastening to its work of death.

Flight was now all but impossible, even had the imperilled multitudes been prepared for it. As it was, the doomed ones were asleep. Quietly they lay themselves down to rest; terrible was their awaking. A farmhouse, with all its occupants, was swept away at a blow; not a vestige of the homestead was suffered to remain; even the cows, fourteen in number, perished. Desolation could not be more complete. In one place a whole wood disappeared! Trees, haystacks, cattle, wrecks of houses, implements of husbandry—men, women, children—all went whirling down in one tumultuous torrent. Away went the dark waters, hurrying every obstacle with them. The roar was heard far off by wakeful ears; but what could it mean? It was a dreadful sound; but who could tell its signification? On went the flood, tearing away houses with their foundations. Whole rows of cottages disappeared, and left not so much as "a wreck behind." An entire village was either swept away or laid in ruins. In some cases—probably lying nearer the margin of the flood—life was spared. Some there were who, being aroused by the strange commotion, found their retreat cut off from below, and with frantic efforts broke through the roofs, where they shivered and trembled in the cold night-wind until succor came or the wild flood subsided. The very gardens of the cottagers were swept away or buried in mud. At Neepsend the little plots thus destroyed are said to have covered nine

hundred acres. From the reservoir to Sheffield was a distance of six miles, and fearful was the havoc along this route. The sentinel at the barracks nearly experienced the fate of the guard at Pompeii. As he paced near the outer wall the roar of the flood broke upon his ear; in a few seconds he was battling for his life amidst mud and water, and, despite the alarm which he raised, two children were drowned in the barracks, while their parents were dragged out seemingly half dead. At Sheffield itself the sound of the torrent was heard at about a quarter past twelve. At first there seems to have been a hissing kind of noise, then a loud, long, terrible roar, and the flood burst in on the lower parts of the town, demolishing bridges and swelling the stream of the Don with the accumulated waters, thickly strewn with the *débris* of that woful ruin which had transpired above. A considerable part of the town was inundated, some lives appear to have been lost, and a sad destruction of property is reported among tradesmen and others. At day-break the terrors of the calamity became more distinctly known, and the fearful sacrifice of life in the upper part of the valley became the subject of rapid rumors mingled with deep commiseration. The swollen river also told its tale in the wreck of property and the frequent corpses which went floating by on the turbid stream. Far down the river the inundation spread, and the destruction of growing crops will help to swell the total loss consequent on this heart-rending visitation.

It is a poor and heartless philosophy which can look on this sea of ruin, and talk of it as an awful retribution and a chastisement for the blundering and shortcomings of human art. What had the poor sufferers to do with the imperfect workmanship or defective management of the Bradfield reservoir? The engineers escaped, and death came on those who were irresponsible. If there have been blundering and shortcoming any where, these offenses are to be proved by evidence and properly visited—not by the laws of nature—but by the laws and institutions of society. Fault of some kind we fear there must have been, either in the mechanical construction of the reservoir, or in the precautions proper to such a magazine of power.

LITERARY MISCELLANIES.

GOULD & LINCOLN, the eminent Boston publishers, so well and widely known for the vast issues of valuable books from their teeming press, have sent us a fresh installment of their publications. Among these is *The Life and Times of John Huss; or, The Bohemian Reformation of the Fifteenth Century*. By E. H. GILLET. In two volumes. Second edition, revised. Boston: Gould & Lincoln, 59 Washington-street. New-York: Sheldon & Co. Cincinnati: George S. Blanchard. 1864. Vol. I., 662 pages. Vol. II., 651 pages. With ample contents to each volume, and extended and valuable index. Vol. I. has twenty-three chapters, richly laden with historic treasures. Vol. II. has twenty-one chapters, full of the affluence of thought. It does the eye and the mind good, exciting a thrill of pleasure to look even at the external aspects of these attractive and splendid volumes. A glance at them shows the neatness, the mechanical perfection, the luminous and typographical beauty of the printed pages, which add to the luxury of reading such books.

The Preface is a model of its kind in beauty and force of diction, in ample brevity and in clearness of historic statement. It is like the transparent windows of a well-illuminated mansion, outside of which one can stand and look in upon the richly furnished apartments. We like a well-written Preface. We want the keys of the whole house before we enter to examine its attractions and treasures.

The books themselves. Mr. Gillett has done good service to the cause of historic literature in the preparation of these volumes, and erected a monument to his talents, his research, his patient investigation into the archives of the olden time, and his ample abilities for the achievement of such a work, which will be more enduring than marble. Mr. Gillett has gone down into the old mausoleums and graveyards of history, making extensive and thorough explorations for long hidden and buried treasures, and has found and brought up into the fresh sunlight of modern days the many golden fragments, putting them all into his ample crucible, has melted them down, re-casting the whole into one colossal statue of historic beauty, which all the living lovers of literary statuary may examine, and admire, and study with increasing pleasure and profit. We remember our deep impressions when visiting the scenes of his long and arduous labors at Prague, almost fancying we could see his departing form, and hear the echo of the retiring footsteps of the venerable Huss, as he left the place, never to return.

Mr. Gillett has laid the friends of the Reformation and of evangelical history under strong obligations for the thorough and impartial manner in which he has performed this "labor of love." We have not time or room here to begin to do adequate justice to the sterling merits of these volumes, or to express our high appreciation of their historic value. The press abounds with generous and ample commendations of the work; and the fact, that a second edition has been already

called for and published, is sufficient testimony, and must give birth to pleasurable gratifications, both to the author and to the publishers, at the success of this valuable work.

DEATH OF MR. TICKNOR.—The sudden death of Mr. W. D. Ticknor, of the eminent publishing house of Ticknor & Fields, at Boston, who died last week at the Continental Hotel, in Philadelphia, has filled the hearts of many friends with unaffected sorrow. He was well and widely known both in this country and in Europe. He was one of nature's noblemen, urbane in his manners, and generous and kind, in his intercourse and treatment of others. He was in this city a few days since in his usual health. He went to Philadelphia with his friend Mr. Hawthorne, for a little excursion of rest and recreation. They rode out to Point Breeze Park, where Mr. Ticknor first complained of illness. They returned to the hotel, and the disease rapidly matured into congestion of the lungs, which, in a few hours, terminated his valuable life. In calm composure, and while his friend, Mr. Hawthorne, held his hand, the brilliant lamp flickered and went out.

INDUSTRIAL BIOGRAPHY: IRON-WORKERS AND TOOL-MAKERS. By SAMUEL SMILES, author of "Self-Help," "Brief Biographies," etc. Boston: Ticknor & Fields. 1864. Pp. 410.

THIS is an instructive and valuable book, leading young men into the great secret of success in life, and showing them how to become the architects of their own fortune, by showing them how others have done it. Well-written biography is always instructive, but it is much more so when recounting the lives of men who have distinguished themselves in practical life, especially among the iron wonders of the age, with its marvellous productions. We commend this book to all iron-workers and tool-makers.

COUNSEL AND COMFORT: Spoken from a City Pulpit. By the author of the "Recreations of a Country Parson." Boston: Ticknor & Fields. 1864. Pp. 311.

THE author of this book, whose writings are so familiar to the readers of THE ECLECTIC, by articles from *Fraser's Magazine*, wields a gifted pen on the topics of this book, as in all his other productions. The book is rich in thoughts of great practical importance to man's religious interests. We welcome the volume, and heartily commend it to the attention and perusal of all serious readers. There is no one who would not receive valuable instruction from its affluent pages.

THE CAMPANER THAL, and other writings, from the German of JEAN PAUL FRIEDRICH RICHTER. Boston: Ticknor & Fields. 1864. Pp. 383.

THIS is a curious and instructive book. The name and fame of Richter attract the reader to his writings—so rich and affluent in his imagin-

ings, his fancies, and his facts. His mind and pen luxuriate in graphic descriptions of scenes and objects, and the mind of the reader has only to spread its wings and soar away with the author, and see things as he sees them. *Campaner Thal* is a beautiful valley of the Pyrenees, to which the author made a sort of pilgrimage, calling his letters not chapters, but stations, and begins, as he says, "jokingly," omitting 500 to count 501. The reader will encounter graphic descriptions and incidents, very life-like, all along the pages of the volume.

PELAYO: AN EPIC POEM OF THE OLDEN MOORISH TIME. By MRS. ELIZABETH T. PORTER BEACH. New-York: D. Appleton & Co., 445 Broadway. 1864. Pp. 424. With illustrations.

In the conception and plan of this beautiful historic poem, the gifted author has shown a poetic skill and genius in the language and style of her verse rarely equalled. It is no difficult matter to write poetry of some sort, if an individual has any poetic inspiration whatever; but to write a poem richly interwoven with the names and heroes of another age, and a foreign land and a foreign tongue, combining the personal incidents of these historic personages, and making names all stand in their appropriate places and conform to the laws of rhythm, is no easy matter. We marvel at the skill and genius which the author has displayed in her poem, as well as the descriptive power in her pages. The book is admirably printed on tinted paper, in clear and tasteful type, in the style of the Appletons, worthy to find a place on the tables of all lovers of historic and poetic verse.

THE NATIONAL ALMANAC AND ANNUAL RECORD FOR 1864. Pp. 641. Philadelphia: George Childs, 630 Chestnut-street.

This truly national work combines and contains an immense mass of facts and information, statements and statistics, in regard to all the departments of the government, the courts, the army, and navy, public men and officers, which are so valuable and desirable to every well-informed man. This book is an immense photograph gallery of current events. It is a miracle of condensation, and yet without confusion, so that any one can find the facts and information needed at once. By turning to the proper page, and opening the volume at a certain place, you find the name of any vessel in the navy, with armament, tonnage, and all the particulars. The accuracy with which the millions of figures and names are given is wonderful. The book, in a word, is a library of information.

THE WITNESS PAPERS. The Headship of Christ, and the Rights of the Christian People. A collection of Essays, Historical and Descriptive Sketches, and Personal Portraits, with the Author's celebrated letter to Lord Brougham. By HUGH MILLER, Author of "Footprints of the Creator," etc. Edited, with a Preface, by Peter Bayne, A.M. Boston: Gould & Lincoln. New-York: Sheldon & Co. Cincinnati: George S. Blanchard. 1863. Pp. 502.

The name, the character, and the scientific writings of Hugh Miller are so well known to the reading world that the announcement of this book would at once commend it to the attention of the public. But in this volume Hugh Miller appears

in a new character, on a new stage. At a time when Scotland trembled and reverberated under the heavy tread of the division march of the Scottish church, Hugh Miller shouldered his big geological sledge-hammer and became "the champion of the church" amid the exciting scenes of that eventful period. This book, therefore, partakes much of the character of an ecclesiastical history of those times, and as such it will be read with interest and profit.

GOULD & LINCOLN have also sent us their *Annual of Scientific Discovery; or, Year-Book of Facts in Science and Art* for 1864. Edited by DAVID A. WELLS, A.M., M.D., author of *Principles of Natural Philosophy*, etc. Boston: published by Gould & Lincoln. New-York: Sheldon & Co. 1864. This book carries in its very name and in its title, and on its forehead—if a book can be said to have a forehead—the exceeding value and interest which attach to the discovery of scientific facts. We would give more for one new scientific fact than for forty fictions. Facts inform the mind and strengthen the intellect.

SATAN'S DEVICES, AND THE BELIEVER'S VICTORY. By REV. WILLIAM L. PARSONS, A.M., Pastor of the Congregational Church, Mattapoisett, Mass. "Lest Satan should get advantage of us; for we are not ignorant of his devices." 2 Cor. 2: 11, etc. Boston: Gould & Lincoln. New-York: Sheldon & Co. Cincinnati: George S. Blanchard. 1864. Pp. 312.

This is a book and a subject of great practical value, of interest to every mind and heart of the human family. Strange that any intelligent or reflecting mind should doubt for a moment the existence, the tempting power, the ensnaring influence, and the terrible machinations of this great enemy of God and man. This evil "prince of the power of the air, which worketh in the children of disobedience," is abroad, like a skillful commander, marshaling and directing the hosts of rebellion against the authority and government of God all over the earth. This book is therefore one of practical wisdom.

GOULD & LINCOLN have also sent us Dr. Peabody's Lectures, *Christianity the Religion of Nature*. Lectures delivered before the Lowell Institute. By A. P. PEABODY, D.D., LL.D., Preacher to the University. Second edition. Revised. Boston: Gould & Lincoln. New-York: Sheldon & Co. Cincinnati: George S. Blanchard. 1864. Pp. 256.

This is a book to be read and studied and inwardly digested. It takes and occupies strong positions, against which the batteries of infidelity may thunder attacks in vain. The book is comprised in twelve chapters, which discuss the doctrines of mental and moral philosophy, and the relations of man to the government of God and a future world, with clearness and force. Its careful perusal can hardly fail to improve the mind and mend the heart.

THE AMERICAN NEWS COMPANY.—For years past our readers will have seen, on the first-page cover of *THE ECLECTIC* the familiar names of Sinclair, Tousey, H. Dexter, Hamilton & Co. Recently these gentlemen have united in the firm called the American News Company, who publish various works as well as fill orders for periodical dealers

in all the cities and villages of our country. These gentlemen have combined and concentrated their forces into a kind of Potomac army for literary activities and onsets in all and every direction where their services are required, and, like General Grant's flying artillery or cavalry, are ready to move at a moment's notice, to the achievement of any order which may be made on their resources. Their headquarters are at 119 Nassau-street, New-York.

THE WINSLOW FAMILY.—A genealogical register of this family is in course of preparation by the Rev. Hubbard Winslow, D.D., of New-York. Its period of time will date with two or three generations previous to the landing of the Pilgrims down to the members of the family now living. The work will contain biographical and historical sketches of the most distinguished men furnished by the family, from the time of Edward Winslow to the death of Lord Lyndhurst. Information on the subject will be gladly received by the gentleman who edits the work. His address is No. 376 Fourth-street.

CURIOUS FACTS ABOUT WATER.—The extent to which water mingles with bodies apparently the most solid is very wonderful. The glittering opal, which beauty wears as an ornament, is only flint and water. Of every 1200 tons of earth which a landholder has in his estate, 400 are water. The snow-capped summits of Snowdon and Ben Nevis have many million tons of water in a solidified form. In every plaster-of-Paris statue which an Italian carries through our streets for sale, there is one pound of water to every four pounds of chalk.

The air we breathe contains five grains of water to each cubic foot of its bulk. The potatoes and the turnips which are boiled for our dinner, have, in their raw state, the one 75 per cent., the other 90 per cent. of water. If a man weighing ten stone were squeezed flat in a hydraulic press, seven and a half stone of water would run out, and only two and a half of dry residue remain. A man is, chemically speaking, forty-five pounds of carbon and nitrogen, diffused through five and a half pailsful of water.

In plants we find water thus mingling no less wonderfully. A sunflower evaporates one and a quarter pints of water a day, and a cabbage about the same quantity. A wheat plant exhales in 172 days, about 100,000 grains of water. An acre of growing wheat, on this calculation, draws and passes out about ten tons of water per day. The sap of plants is the medium through which that mass of fluid is conveyed. It forms a delicate pump, up which the watery particles run with the rapidity of a swift stream. By the action of the sap, various properties may be communicated to the growing plant. Timber in France is, for instance, dyed by various colors being mixed with water, and poured over by the root of the tree. Dahlias are also colored by a similar process.

RE-APPEARANCE OF THE JESUITS IN FRANCE.—The Jesuits, who were for so long a period in obscurity in France, unrecognized at the French Court, and fearful in any way of making themselves publicly conspicuous in Paris, appear now to have emerged from their retirement, and openly show signs of wealthy resources in the erection of new and magnificent buildings.

NAPOLÉON III. was sixty years old last month.

HON. DANIEL WEBSTER, at more than one period of his life, dallied with the muses. In 1825, he had the misfortune to lose a son, three years of age, named Charles, represented to have possessed singular attractiveness of mind and character even at that early age. On that occasion Mr. Webster inclosed the following effusion in a letter to his wife:

"My son, thou wast my heart's delight,
Thy morn of life was gay and cheery;
That morn has rushed to sudden night,
Thy father's house is sad and dreary.

I held thee on my knee, my son!
And kissed thee laughing, kissed thee weeping;
But ah! thy little day is done,
Thou'rt with my angel sister sleeping.

The staff on which my years should lean
Is broken, ere those years come o'er me;
My funeral rites thou should'st have seen,
But thou art in thy tomb before me.

Thou rear'st to me no filial stone,
No parent's grave with tears beholdest;
Thou art my ancestor, my son!
And stand'st in Heaven's account the oldest.

On earth my lot was soonest cast,
Thy generation after mine—
Thou hast thy predecessor passed;
Earlier eternity is thine.

I should have set before thine eyes
The road to Heaven, and showed it clear;
But thou, untaught, spring'st to the skies,
And leav'st thy teacher lingering here.

Sweet seraph, I would learn of thee,
And hasten to partake thy bliss!
And oh! to thy world welcome me,
As first I welcomed thee to this.

Dear angel, thou art save in heaven;
No prayer for thee need more be made;
Oh! let thy prayer for those be given
Who oft have blessed thy infant head.

My father! I beheld thee born,
And led thy tottering steps with care;
Before me risen to heaven's bright morn,
My son! my father! guide me there."

LIEUTENANT-GENERAL GRANT.—A fine large portrait and a striking likeness, photographed from life, of this distinguished commander of the United States Army, has just been beautifully engraved and published by George E. Perine, artist of *THE ECLECTIC*, at No. 10 Cortlandt-street, New-York. The price is \$1. Sent by mail, postage paid, to any address, on receipt of \$1, transmitted either to Mr. Perine, or to the office of *THE ECLECTIC Magazine*, No. 5 Beekman-street.

OVER twenty-two thousand Massachusetts soldiers have made allotments for their families during the past year, the sums amounting in the aggregate to \$1,091,000.

AN ax-factory in Massachusetts uses twelve hundred tons of iron a year, about one half of which is imported, and two hundred and fifty tons of cast steel, much of which is procured from the works at Fitchburg. Its forges consume eighteen hundred tons of coal a year.

THE WRONGS OF THE STOMACH.—In most of the early literatures is to be found a dialogue between the body and the soul, in which each accused the other of their mutual perditions, recapitulating the offenses which have produced it. Something similar might be written, with good effect, dividing the imaginary conversation between, let us say, the stomach and the man, and making an attack of gout the subject of their recrimination. The man might accuse the stomach of having done its duty so badly that he is tormented with a burning fire in his extremities, which will neither let him eat, drink, walk, nor rest. The stomach might plead justification, and say, that she had lighted the said fire as the only means of getting a moment's rest from an intolerable taskmaster. Again, the man might complain that he had lost all enjoyment of life, that his spirits were depressed, his mind gloomy, his appetite gone, his once fine, muscular system reduced to flabby indolence; that his food did him more harm than good, so that it had become a misery to eat, and that every meal was followed by a leaden oppression which rendered life an insupportable burden. The stomach, having listened to all this, delivered in a tone of angry accusation, would reply: "My case is just as bad as your own. Before I had well digested your breakfast, you gave me a meat luncheon to see to, and before I had got that out of the way, you thrust a dinner upon me large enough for three stomachs. Not satisfied with that, you wound up the day with a supper, drenching me all the time with ale, wine, spirits, tea, coffee, rum, more wine, and more spirits, till I thought you had taken leave of your senses; and when I heard you groaning in your sleep, starting up every now and then as if apoplexy had broken into the house, and was going to carry you off, I said to myself: 'Serve him right if it did.' And in this way you went on year after year, treating all my remonstrances with contempt. I gave you headache after headache; I tried to recall you to reason with half a dozen attacks of influenza; gave you a bilious fever; made you smart with rheumatism; twinged you with gout till you roared. But all to no purpose. You went on making me digest till the work broke my back, and now I can digest no longer." This reproach might be made even pathetic, by a description of the stomach watching its hard task come down to it from the regions above between dinner and bed-time. First comes a plate of soup and bread, and a glass of sherry. "I can manage that," says the stomach. Then a plate of fish, with more bread and more sherry; "and that," adds the stomach, "though these sauces don't quite agree with me." Then comes beef, or mutton, or both, and stout; then game and sherry; then a dish of tart. "Confound this pastry," says the stomach, "it gives me more trouble than anything else; but if the master will only stop here, I think, if I put out all my powers, I can get even this rubbish out of the way." But she has hardly taken this hopeful view of the case, when down come cheese, celery, apples, oranges, nuts, figs, almonds and raisins, port, sherry, claret, and a tumbler of hot Hollands-and-water. "Good gracious, was there ever such a mess?" exclaims the stomach; "what can the man mean? Does he think one pair of hands can manage all this?" Still the willing slave goes to work, when presently there is a rush of hot tea from above, with a thin slice of bread-and-butter.

And when the stomach with infinite labor has got the hodge-podge into some sort of homogenous shape, and is preparing to take a nap after her exhaustion, lo! a deviled drum-stick rushes into its laboratory, two deviled kidneys, a bottle of stout, and three tumblers of hot brandy-and-water. —*London Review.*

DRAWING-ROOM DRESS.—At a Drawing-Room, held for the Queen, on the 19th ult., the Princess of Wales wore a blue velvet train, ornamented with silver cord and tassels; a petticoat of white satin, with Brussels lace flounces, and trimmings of blue velvet and silver flowers. The head-dress a tiara of diamonds, with feathers, and tulle veil with silver stars. H. R. H. also wore a necklace, brooch, and ear-rings of pearls and diamonds, and the Portuguese Order of Isabella. The Princess Helena wore a train of rich pink silk, trimmed with crape ruche; petticoat of white glace, covered with white tulle ruches, and trimmed with bunches of moss-roses and acacia; head-dress, wreath of the same flowers, feathers and lappets; ornaments, diamonds. The Grand Duchess of Mecklenburg wore a manteau of rich blue satin, trimmed with Honiton lace; petticoat, white satin, with Honiton flowers; tiara, necklace, stomacher, and ear-rings of diamonds and pearls. The Princess Mary of Cambridge wore a white tulle petticoat, with ruches of blue crape covered with silver, tulle veil, a white corded silk train lined with blue and trimmed with Mechlin lace; head-dress, a diadem of diamonds, with forget-me-nots, feathers, and silver veil; necklace, stomacher, and ear-rings of diamonds and turquoises.

A MILWAUKEE banker has made sundry arithmetical calculations concerning a national debt of four thousand millions, from which it appears that if our obligations should reach that amount, the column of dollars would be five thousand five hundred and seventy and two fifths miles in height; that it would take one hundred and thirty-eight thousand eight hundred and eighty nine teams to carry the silver, allowing one ton to each; and that the length of the line of teams would be three hundred and ninety-four miles.

The table and chair used by Washington at the time of resigning his commission are to be exhibited among the curiosities at the Maryland State Fair this month.

TWENTY-SEVEN Spanish dollars have just been dug up in enlarging the cellar of a house on the outskirts of New-London, Conn. One of them bears the date of 1779; none of them were of a later date than 1784. W. D. Bowers, Adams' express agent at New-London, bought the whole twenty-seven at a dollar and a half each.

The musical works of Benedetto Marcello, who was born in Venice in 1686 and died in Brescia in 1739, are soon to be republished in Milan, the previous four editions being now out of print. They will be accompanied with the additions made by Cherubini to Marcello's compositions.

THE LATE KING OF BAVARIA.—Late information from Vienna states the death of the King of Bavaria was owing to lock-jaw, originating in a scratch on the breast from a pin attached to an order he was fastening on his coat. He was sick but four days.

THE BAGGAGE OF AN "INCOGNITO."—Last night the Archduke Maximilian and the Archduchess his wife took leave of the splendid host, who has not only received and fêted them in the Old, but who has made them emperor and empress—provided always that the cup does not slip before it reaches the lip—in the New World, and went off by the mail train to London. And here again I pause, and ask: How much luggage do a prince and princess—on the eve certainly of attaining a higher round on the social ladder—really require? I was at the station, and beheld the imperial fourgons as they poured in with the luggage: it was a surprising sight. Do they carry about portable huts, or grand pianos? Are their plate and pictures packed up with them when they go out for a little visit, or have they with them a neat cellar of carefully selected wines? And these princes, too, were *incogniti*. Mercy upon us! Had they been here in all their glory, what impediments they would have had! "Kings are little cattle," says the Scotch gentleman in one of Scott's novels, and I was much of that opinion last night, as I saw an English peer, who could buy up their Imperial Highnesses, and even offer a fair bid for the reversion of a Mexican crown, carry a little portmanteau out of his *remise* into the station.—*Paris Letter, March 13.*

HEAVEN'S BEST GIFT.—Jeremy Taylor says, if you are for pleasure, marry; if you prize rosy health, marry. A good wife is Heaven's last best gift to a man: his angel of mercy; minister of graces innumerable; his gem of many virtues; his casket of jewels; her voice his sweetest music; her smiles his brightest day; her kiss the guardian of innocence; her arms, the pale of his safety, the balm of his health, the balsam of his life; her industry his surest wealth; her economy his safest steward; her lips his faithful counselors; her bosom the softest pillow of his cares; and her prayers the ablest advocates of Heaven's blessings on his head.

ANOTHER INTERNATIONAL BRIDGE.—A meeting of commissioners of the International Bridge Company for a bridge between Buffalo and Canada, over the Niagara river, was held in Buffalo, April 6th. Over three millions of dollars were subscribed. The estimated cost of the bridge is only one million. Its speedy construction is looked upon as certain.

THE SULTAN'S TASTE.—A Paris letter in the *Independence of Brussels* says: "The Sultan is now having executed in Paris, by the most eminent sculptors, twenty-four animals—lions, tigers, elks, horses, and bulls—destined to ornament the gardens of the splendid palace which is being built at the Sweet Waters. All the animals will be of natural size. Fourteen of them will be cast in bronze, and afterward undergo a bath of gilding; and ten will be in Carrara marble."

HEAT FROM THE STARS.—Dr. Lordner says: "It is a startling fact that if the earth were dependent alone upon the sun for heat, it would not get enough to keep existence in animal and vegetable life upon its surface. It results from the researches of Pouillet that the stars furnish heat enough in the course of the year to melt a crust of ice seventy-five feet thick—almost as much as is supplied by the sun. This may appear strange, when we

consider how immeasurably small must be the amount of heat received from any one of those distant bodies.—But the surprise vanishes when we remember that the whole firmament is so thickly sown with stars that in some places thousands are crowded together within a space no greater than that occupied by the full moon. The eye can not see more than a thousand at the same time in the clearest heaven, yet the number is probably infinite. From the first to the sixth magnitude inclusive, the total number of visible stars is 3128."

THACKERAY'S HOUSE.—It stands in the old court suburb, at the entrance of Palace Gardens, close to the King's Arms, which had been a hostelry since the days of Steele and Addison, guarding the palace where the first Georges laid out their Dutch gardens, and formally planted pleasure grounds. He superintended every part of the designing and furnishing of the house. It is in red brick, with stone dressings, as complete a resurrection of the best form of a Queen Anne mansion as "Esmond" is of an autobiography of the same date. The rooms are spacious, handsome, and conveniently disposed; the fire-places, in particular, have great character, and were costly. The furniture was of his own choice, much of it of his own planning—his tables, his chairs, the desk at which he used to write in his peculiar fashion, resting it on the arms of the chair in which he sat.

THE *Washington Chronicle* presents the following exhibit of the strength of the Union armies: The number of volunteer enlistments from January 1st to November 1st, 1863, was 68,000; from November 1st, 1863, to January 31st, 1864, 110,000; from January 31st to February 28th, 1864, 90,000; add product of draft of 1863, 40,000; add deserters returned, 28,000; Invalid Corps, 25,000; reenlisted veterans, 100,000; add black troops, 70,000; total, 531,000. To show the actual gain of the army, the 100,000 reenlisted veterans must be deducted, as well as the killed, wounded, prisoners, and disabled during the year, said to amount to 125,000 which would leave the army 306,000 larger now than it was January 1st, 1863.

THERE has been a great falling off in the value of the annual productions of Ireland. In the year 1860 it was estimated at £39,477,000. In 1863 it was but £27,327,000. Here is a decline of more than \$60,000,000 in four years.

WHEN stretched upon his bed in the agony of gout, it was reported to Chatham that one of his official subordinates pronounced an order impossible of execution. "Tell him," said he, rising up, and marching across the room on his swollen feet, his face streaming with perspiration from the excruciating effort, "tell him it is the order of a man who treads upon impossibilities."

Kossuth has issued another proclamation to the Hungarians in the Austrian army. The ex-dictator prays his countrymen to desert the Austrian flag, declaring that the Hungarians are about to be freed by an alliance with Italy.

THE Michigan Normal School has five hundred and six students. The State pays annually over half a million dollars for teachers' salaries in the public schools.



Engraved from Photograph for the Echo by Geo. E. Perino, N.Y.

George Plafie de

NEW YORK

